PRC-STP-00042
Revision 0

Sludge Treatment Project: Cost Comparison between Hydraulic Loading and Small Canister Loading Concepts

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Contractor for the U.S. Department of Energy
under Contract DE-AC06-08RL14788

CH2MHILL
Plateau Remediation Company

P.O. Box 1600
Richland, Washington 99352

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Sludge Treatment Project: Cost Comparison between Hydraulic Loading and Small Canister Loading Concepts

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E. A. Conrad
D. Rhoadarmer
CH2M HILL

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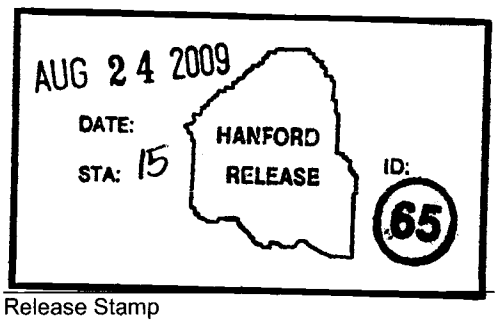

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1 Purpose

The Sludge Treatment Project (STP) is considering two different concepts for the retrieval, loading, transport and interim storage of the K Basin sludge. The two design concepts under consideration are:

- Hydraulic Loading Concept – In the hydraulic loading concept, the sludge is retrieved from the Engineered Containers directly into the Sludge Transport and Storage Container (STSC) while located in the STS cask in the modified KW Basin Annex. The sludge is loaded via a series of transfer, settle, decant, and filtration return steps until the STSC sludge transportation limits are met. The STSC is then transported to T Plant and placed in storage arrays in the T Plant canyon cells for interim storage.

- Small Canister Concept – In the small canister concept, the sludge is transferred from the Engineered Containers (ECs) into a settling vessel. After settling and decanting, the sludge is loaded underwater into small canisters. The small canisters are then transferred to the existing Fuel Transport System (FTS) where they are loaded underwater into the FTS Shielded Transfer Cask (STC). The STC is raised from the basin and placed into the Cask Transfer Overpack (CTO), loaded onto the trailer in the KW Basin Annex for transport to T Plant. At T Plant, the CTO is removed from the transport trailer and placed on the canyon deck. The CTO and STC are opened and the small canisters are removed using the canyon crane and placed into an STSC. The STSC is closed, and placed in storage arrays in the T Plant canyon cells for interim storage.

The purpose of the cost estimate is to provide a comparison of the two concepts described above.

2 Summary

The cost estimates are summarized in Table 1. The costs are applicable for comparison between the two concepts only and are not representative of baselined project costs.

Table 1. Cost Estimate Summary

Life Cycle Costs	Small Canister Loading	Hydraulic Loading
Engineering, Procurement & Construction (EPC)	$62M	$44M
EPC Cost Range	$43M - $92M	$30M - $65M
Operations	$56M	$60M
Total Life Cycle	$117M	$104M
Life Cycle Range	$99M - $148M	$90M - $125M

The cost estimates are considered Class 4 estimates per the Association for Advancement of Cost Engineering (AACE) International definitions. A Class 4 estimate has an expected accuracy range from a minus 30% to a plus 50%; this accuracy range is applied to the EPC costs only. The methodology, scope and basis for the cost estimates is provided in Appendix A.

Table 2 provides the annual expenditures during the Engineering, Procurement and Construction (EPC) phase of the project in addition to the operating costs for the transfer of the sludge from KW Basin to T Plant in FY2014 and FY2015.

Table 2. Comparison of Annual Expenditures

Fiscal Year	Small Canister Loading ($M)	Hydraulic Loading ($M)
FY 2010	16.1	16.9
FY2011	18.5	18.9
FY2012	22.0	21.7
FY2013	45.5	31.0
FY2014	14.7	14.5
FY2015	0.6	0.5
Total	117.4	103.5

Table 3 provides the cost by WBS element for the life cycle costs for the Hydraulic Loading and Small Canister Loading concepts.

Comparison of the costs shows significant differences between the two concepts in the following areas:

- The Small Canister Loading concept has higher procurement costs compared to the Hydraulic Loading concept. About half of the procurement costs are for the small canisters themselves (~$8.2M or about 46%).
- In the case of the Hydraulic Loading concept, the new construction and building modification costs for the KW Basin/Annex are approximately 4 times higher than those shown for the Small Canister Loading concept (these costs also include the costs for cleaning out an additional cell in T Plant in addition to the KW Basin/Annex modifications).
- WBS element 17 provides an estimate of the EPC risks for each concept, with the Small Canister Loading concept having a higher cost estimate of $12M versus $7.2M for the Hydraulic Loading concept. These risk/contingency costs were based on a graduated risk/contingency factor that was applied on each line item in the estimate and then summarized in WBS element 17. Factors ranged from 0% on Operations costs to 35% on construction items; the Risks for the estimates ranged from 15% TO 35% with a midpoint of 25%. The overall composite risk/contingency on the EPC cost estimates was ~19.4% for the Small Canister Loading concept and ~16.5% for the Hydraulic Loading concept.

Table 3. Cost Comparison by WBS Element

WBS Level 2	Description	Small Canister Loading ($M)	Hydraulic Loading ($M)
.01	Project Management	2.8	2.8
.02	Project Support	0.6	0.6
.03	Environmental Documentation, Permitting & Waste Acceptance	0.4	0.4
.04	Nuclear Safety	1.9	2.0
.05	Radiological Control	0.1	0.1
.06	Industrial Safety	0.1	0.1
.07	Quality Assurance	0.1	0.1
.08	Safeguards & Security	0.1	0.1
.09	Technology Development	9.4	9.4
.10	Conceptual Design	1.6	1.2
.11	Preliminary Design	2.4	1.9
.12	Final Design	5.0	3.8
.13	Engineering During Construction	3.4	2.6
.14	Procurement	18.1	2.5
.15	Construction	1.7	6.8
.16	Startup & Testing	3.7	3.7
.17	Risk	12.0	7.3
.18	Operations & Maintenance[1]	54.0	58.1
	Total	117.4	103.5

Note that these cost estimates only include T Plant modification costs above and beyond those shown in HNF-40917, revision 0, *Sludge Treatment Project Phase 1 Sludge Storage Options – Assessment of T Plant Versus Alternate Storage Facility*.[2] In the case of the Small Canister Concept, an additional T Plant cell required modification to accommodate the estimated number of Small Canisters that would be generated based on the fissile gram equivalent (FGE) limits imposed by the Risk Based – Special Packaging Authorization (SPA) and by the current size of the small canisters. Should the restriction on the FGE limits be removed, and the small canister size be further optimized, the Small Canister Loading concept would be Dose Equivalent Curie (DE-Ci) limited. As a result, the container procurement costs, the number of shipments and the storage requirements in T Plant could potentially be reduced. A rough estimate of the cost reduction based on preliminary information shows that this change would result in about a $6M reduction in the Small Canister Loading concept costs.

[1] Any differences in costs between Table 1 and Table 3 are a function of how the Add-on amounts are allocated and spread over the multi-year duration by the estimating software and results in about a 0.8% delta between where costs are calculated and costs are spread for the estimate

[2] The cost estimate for T Plant was a Total Life Cycle cost range of $12M to $17M.

3 Basis and Assumptions

The cost estimates were based on discussions with subject matter experts, relevant drawings, and sketches available in June – July 2009, and estimate details developed as part of the original Alternatives Analysis documented in HNF-39744, revision 0, *Sludge Treatment Project Alternative Analysis Summary Report,* and HNF-40917, revision 0, *Sludge Treatment Project Phase 1 Sludge Storage Options – Assessment of T Plant Versus Alternate Storage Facility.*

Generic assumptions applied to both concepts:

- The process flowsheet conditions in HNF-41051, revision 0, *Preliminary Engineered Container Process System Description and Material Balance*, were assumed to be applicable.[3]

- Staffing for KW Basin and Annex sludge retrieval operations was assumed to be as follows per discussion with J. D. Mathews:

Labor Type	FTE
Millwrights	2
Riggers	2
First Line Supervisors	2.5
NCOs	10
Crane Equipment Operators	1
Health Physics Technicians	4.5
Health Physics Supervisor	0.5

- Operations staffing for T Plant for sludge receipt and storage operations was assumed to be the same as used in the cost estimates from HNF-40917, revision 0, *Sludge Treatment Project Phase 1 Sludge Storage Options – Assessment of T Plant Versus Alternate Storage Facility*:
- Both K Basin and T Plant staffing was assumed to be in place one year prior to the start of operations to complete training and an operational readiness review (ORR).
- Costs for project management, construction management, procurement support, safety & environmental support, etc., were resource loaded based on previous SME man-hour estimates used in HNF-40917.
- Engineering costs for the estimates were based on a percentage of the construction plus procurement costs, consistent with HNF-40917 and are as follows:
    - Conceptual design @10%
    - Preliminary design @ 15%
    - Final design@ 30%
    - Engineering and inspection during construction @ 20%

[3] A change in direction occurred during the cost estimate process for the Small Canister Loading concept that moved the transfer of the small canisters from the FTS cask to the STSCs to T Plant rather than at KW Basin as shown in HNF-41051 and is accounted for in the Small Canister Loading specific assumptions.

Small Canister Loading specific assumptions:

- SK-5K series sketches ((e.g., Architecture, Civil, Electrical, P&ID, etc.) – versions that were current between 6/15/09 and 7/14/09) were used to estimate procurement, construction and building modifications costs
- The estimates for the cost of the small canister loading system was based on the SA Robotics cost estimate for the prototype unit, adjusted for a total of 4 production units, 559-DLV-007, *559 SCS Cost and Schedule Estimates for Tasks 1 thru 5.*
- Based on a change of direction midpoint through the cost estimate preparation, the modifications to the KW Annex for transferring the small canisters from the FTS system into the STSCs in the Annex was eliminated and the transfer moved to T Plant. The number of canisters, FTS shipments, and STSCs to move the sludge from KW Basin and store in T Plant as a result of this change was conservatively based on the estimates provided by M. E. Johnson and M. A. Rivera for the fissile gram equivalent (FGE) limited case and are as follows:

Type	Canisters	FTS shipments	STSCs in T Plant
KE Engineered Container	213	54	18
KW Engineered Container	116	29	10
Settler	133	133	12
Total	462	216	40

- An additional T Plant cell would have to be cleaned out and refurbished for interim storage based on the number of STSCs required. Costs for this work were estimated based on the HNF-40917 cost estimates.

Hydraulic Loading specific assumptions:

- SK-4K series sketches ((e.g., Architecture, Civil, Electrical, P&ID, etc.) – versions that were current between 6/15/09 and 6/30/09) were used to estimate procurement, construction and building modifications costs
- A total of 30 STSCs were conservatively assumed for the Hydraulic loading concept to provide a bounding estimate, as was previously used during for the estimates shown in HNF-39744 and HNF-40917.

4 References

1. HNF-39744, revision 0, January 2009, *Sludge Treatment Project Alternative Analysis Summary Report,* CH2M HILL Plateau Remediation Company, Richland, Washington
2. HNF-40917, revision 0, April 2009, *Sludge Treatment Project Phase 1 Sludge Storage Options – Assessment of T Plant Versus Alternate Storage Facility,* CH2M HILL Plateau Remediation Company, Richland, Washington
3. HNF-41051, revision 0, April 2009, *Preliminary Engineered Container Process System Description and Material Balance,* CH2M HILL Plateau Remediation Company, Richland, Washington
4. 559-DLV-007, revision 0, June 2009, *559 SCS Cost and Schedule Estimates for Tasks 1 thru 5,* S. A. Robotics, Loveland, Colorado
5. Email, *Information for Transport of Small Canisters using FTS Cask to T Plant,* E. A. Conrad to D. Rhoadarmer, dated July 9, 2009
6. AACE International Recommendation Practice No. 18R-97, February 2005, *Cost Estimate Classification System – As Applied in Engineering, Procurement, and Construction for the Process Industries,* AACE, Inc

Appendix A

PRC-STP-00042

Sludge Retrieval Options

Small Canister vs. Hydraulic

Cost Estimate Report

CH2M HILL Plateau Remediation Company

August 1, 2009

Prepared by Del Rhoadarmer

Cost Estimator, CH2M Hill

Table of Contents

Sludge Retrieval Options of K Basin Sludge

Small Canister vs. Hydraulic Basis of Estimate

Purpose

The purpose of these estimates is to provide a cost comparison between the small container transport, and the hydraulic loading system to transport the K Basin sludge to T Plant. Below is the summarized Lifecycle cost data for the K Basin Sludge transport for each alternative.

Lifecycle Costs	Small Container $M	Hydraulic Loading $M
Engineering, Procurement, Construction	***$62***	***$44***
Operations	***$56***	***$60***
Total Life Cycle	***$117***	***$104***
Class 4 Expected Accuracy Range	Class 4	Class 4
(-30% to +50%)	$99 to $148 M	$90 to $125 M

Estimate Type

The Small Canister and Hydraulic estimates are both Class 4 estimates per the Association for the Advancement of Cost Engineering (AACE) International definitions. A Class 4 estimate has an expected accuracy range from a minus 30% to a plus 50 % applied to EPC costs only. A more thorough discussion of a Class 4 estimate is included at the end of this document.

Scope

The scope for the Small Canister estimate is to retrieve the sludge using the XAGO retrieval tool. The retrieved sludge will be pumped into an underwater robotic canister system than will deposit the sludge in small canisters. The canisters will be removed from the under water storage area and brought to the existing container transport and truck loading system. A new HEPA filter ventilation system is included. The canister will be transported to T Pant via new FTS containers on new trailer transport. Transport cycles are estimate at 216, with a total canister count of 462. Estimate items were based on four sets of data:

- Preliminary Conceptual Drawings.

- Conceptual estimates for the previous project.
- Discussions with Operations Personnel.
- Discussions with site subject mater experts

The scope for the Hydraulic loading estimate is to retrieve the sludge using the XAGO retrieval tool. Sludge will be transferred to the STSC in the truck loading area via hose in hose system with a leak detection system. The existing annex structure will be modified through partial demolition, new concrete foundation and structural steel addition including a new gantry crane. A new truck scale is included to meet requirement for transporting over existing highways. A new HEPA filter ventilation system with an exhaust stack is included. STSC's will be transported to T Pant via existing truck and trailer transport. Transport cycles are estimated at 30. Estimate items were based on three sets of data.

- Conceptual drawings.
- Structural sketches.
- Discussions with Plant personnel.
- Discussions with site experts

Cost Sources

The construction costs are based on the work scope quantity take off. Material pricing and labor hours were developed from RS Means Commercial Building Construction Costs, site engineering experience, and Subject Matter Experts (SME). Labor productivity was adjusted from commercial to site specific nuclear process quality control rates. Quotes from Vendors were obtained where possible. Costs from previous estimates were escalated to current dollars and used when quotes were not obtainable.

The estimating software used was Timberline Extended by Sage Software. The estimating software pulls standard cost data from the RS Means Commercial Building Construction Cost database. The software also has the flexibility to make customized cost items as required per the scope of the project.

Hanford site employee rates by the COCS classification were per the current rates being used on site. Construction Craft Labor rates were based on the HSSA Craft Labor rates for January 1, 2009. These rates included travel, base wage, Workman's Comp, FICA, SUI, FUTA, and fringe.

Methodology

Two separate estimates are included in this report. The first estimate's scope is for the design, construct, and operate the Small Canister System to transfer the sludge on the Hanford site. The second estimate's scope is to design, construct, and operate the Hydraulic Loading system to transfer the K Basin sludge. The estimates include the following Lifecycle costs:

- Capital Construction Costs
- Program Costs
- Operations Costs

- D&D Costs (not performed)

Based on the scope of work detailed estimate items were generated in the estimates. Detailed estimate items were derived from SME's man hour estimates and drawings (previous construction or conceptual). Typical items that are associated with the work were also included. For instance, placing concrete would require a typical item, testing the concrete. The detailed estimate items were coded with three levels of a WBS, schedule activity, fiscal year, work scope item, and by contract type. These codes enable various sorting and comparison to similar coded estimates and to apply various applicable markups to the items.

Work Breakdown Structure

The scope included for each estimate is broken down by the Work Breakdown Structure (WBS). Level 1 WBS S, is the associated scope for the Small Canister project. Level 1 WBS H, is the associated scope for the Hydraulic Loading System. WBS Level 2 is the same for each project.

WBS Level 2	Description
.01	Project Management
.02	Project Support
.03	Environmental Doc., Permitting, & Waste Acceptance
.04	Nuclear Safety
.05	Radiological Control
.06	Industrial Safety
.07	Quality Assurance
.08	Safeguards & Security
.09	Technology Development
.10	Conceptual Design
.11	Preliminary Design
.12	Final Design
.13	Engineering During Construction
.14	Procurement
.15	Construction
.16	Start up & Testing
.17	Contingency
.18	Operations and Maintenance

Markups

The following marks ups on construction labor were applied as follows:

- Small tools 1.0%
- Consumables 3.0%
- PPE 4.0%.

A labor productivity adjustment of 118% add on factor was applied to labor hours for site work. A labor productivity adjustment of 218% add on factor was applied to the T Plant hot cell work scope. A labor productivity adjustment of 422% add on factor was applied to the K Basin hot cell work scope. These factors adjust commercial database productivity for different work site conditions. The productivity factor evaluation for each factor is explained later in this report.

Other markups ("Addon" amounts) were applied as follows:

- Sales Tax on materials and equipment is 8.3%
- Public Liability Insurance is 2% of costs
- Performance and Payment Bond is 2.0%
- Subcontractor Fee/Profit 25%
- General Requirements (on site construction contractor) 18%
- Escalation by Fiscal Year at a compounded rate of 2.0% per year
- Site G&A is 8.5%

The estimating software (Timberline) applies the Addon amount to the direct costs on the Totals (last) page of the estimate. The estimating software can allocate these Addon costs back into the estimate spreadsheet either on the cost elements or in the Addon Amount Column. When the Addon Amount Column is used, each of the different Addon amounts applied to all the cost elements on that line item are summed for a combined total Addon amount. Due to the multiyear duration of this lifecycle cost estimate a minimum number of Addon criteria were used for the allocation process. This method takes the Addon costs calculated and allocates (spreads) the dollars over the grouping designated. This method results in about 0.8% cost delta between where the costs were calculated and where the costs are spread.

The estimates were prepared in 2009 dollars. The project costs were escalated for work in years 2010 through 2014. Costs were escalated by 2.0% per year.

A graduated risk/contingency factor was applied on each line item in the estimate. Factor ranged from 0% on Operations and D&D costs to 35% on the construction items. The estimates Risk ranged from 15% to 35 % with the Midpoint at 25%. Contingency was totaled by year, removed from the "add on" Totals page and placed in "WBS .17" by year.

Engineering Costs for the estimates were based on a percentage of the construction costs. They are listed below:

- Conceptual Design @ 10%
- Preliminary Design @ 15%
- Detailed Design @ 30%
- Engineering and Inspection During Construction@ 20%

Costs for Project Management, Construction Management, Procurement, Nuclear Safety, etc. were resource loaded by year based on previous SME man hour estimates.

Comparisons

Cost Comparison by Fiscal Year

Fiscal Year	Small Canister System	Hydraulic Loading System
Fiscal Year 2010	16,150,021	16,888,526
Fiscal Year 2011	18,459,195	18,899,385
Fiscal Year 2012	22,021,883	21,750,047
Fiscal Year 2013	45,465,716	31,022,762
Fiscal Year 2014	14,710,170	14,500,519
Fiscal Year 2015	585,770	460,613
Total	**117,392,754**	**103,521,851**

Cost Comparison by WBS Level 3

WBS Lvl 3	Description	Small Canister System	Hydraulic Loading System
.01.01	Project Management	1,604,019	1,613,785
.01.02	Construction Management	1,226,666	1,233,000
.02.01	Project/Facility Support	616,581	620,320
.03.01	Environmental Documentation	288,070	289,834
.03.03	Waste Acceptance	145,553	146,432
.04.01	Nuclear Safety	1,940,128	1,952,048
.05.01	Radiological Control	90,316	90,866
.06.01	Industrial Safety	67,535	67,946
.07.01	Quality Assurance	143,155	144,027
.08.01	Safeguards & Security	81,169	81,672
.09.01	Technology Development Testing	3,135,117	3,154,152
.09.02	Technology Development Assessments	3,135,117	3,154,152
.09.03	Technology Maturation Plan	3,135,117	3,154,152
.10.01	Conceptual Design	1,601,757	1,228,024
.11.01	Preliminary Design	2,438,936	1,875,610
.12.01	Final Design	4,967,448	3,803,772
.13.01	Engineering During Construction	3,367,214	2,576,839
.14.01	Procurement Support	147,565	148,450
.14.02	Equipment Procurement	17,942,954	2,340,351
.15.01	New Construction		6,416,061
.15.03	Bldg. Modifications	1,664,611	381,388
.16.01	Start up & Testing	22,667	22,801
.16.02	Procedure Development	1,432,849	1,434,516
.16.03	Readiness Activities / Planning	1,948,012	1,959,555
.16.04	System Test	153,848	154,760
.16.05	Start Up	180,805	111,920
.17.01	Risk	12,038,098	7,272,057
.18.01	Operations	3,493,852	3,514,418
.18.02	Transportation	1,262,233	220,078
.18.03	Maintenance	49,121,361	54,358,862
.19.01	Deactivation & Decommissioning		
.19.02	Demolition		
.19.03	Site Restoration		
Total		**117,392,754**	**103,521,851**

Sludge Treatment Project: Small Canister Underwater Loading System

Project name	Small Canister rev1 currents est July 28, 2009 5:50 PM
Labor rate table	Hanford FY09
Equipment rate table	COMM2009
Notes	Small Canister Loading System - IPS Engr % K West Basin Min Safe 2010 to 2014 2010 Conceptual Design - Scale Testing 2011 Preliminary Design - Full Scale Prototype 2012 Final Design - Integrated Sys. Testing 2013 Construction 2014 Retrieve sludge 2015 Off River
Report format	Sorted by 'WBS Lvl 1/WBS Lvl 2/WBS Lvl 3/Year/Sch Acty' 'Detail' summary

WBS Lvl 1	WBS Lvl 2	Description	Labor Man Hrs	Labor Amount	Material Amount	Sub Amount	Equip Amount	Other Amount	Total Amount	Addon Amount	Grand Total
S		**Small Canister Underwater Loading System**									
	.01	Project Management	26,331	2,313,144					2,313,144	517,541	2,830,685
	.02	Project Support	6,516	537,143					537,143	79,438	616,581
	.03	Environmental Doc., Permitting, & Waste Acceptance	4,575	379,727					379,727	53,896	433,623
	.04	Nuclear Safety	18,144	1,712,566					1,712,566	227,562	1,940,128
	.05	Radiological Control	832	78,998					78,998	11,318	90,316
	.06	Industrial Safety	832	59,072					59,072	8,463	67,535
	.07	Quality Assurance	1,664	125,216					125,216	17,939	143,155
	.08	Safeguards & Security	1,280	72,314					72,314	8,855	81,169
	.09	Technology Development	74,880	6,853,954			1,350,000		8,203,954	1,201,399	9,405,352
	.10	Conceptual Design	16,800	1,440,096					1,440,096	161,661	1,601,757
	.11	Preliminary Design	25,120	2,153,286					2,153,286	285,649	2,438,936
	.12	Final Design	50,240	4,306,573					4,306,573	660,875	4,967,448
	.13	Engineering During Construction	33,440	2,866,477					2,866,477	500,737	3,367,214
	.14	Procurement	3,938	264,904	3,550,149	8,048,907	42,452	3,241,690	15,148,102	2,942,416	18,090,519
	.15	Construction	9,706	564,926	238,949	408,118	52,823		1,264,816	399,794	1,664,611
	.16	Start up & Testing	54,947	3,189,392					3,189,392	548,789	3,738,181
	.17	Risk						10,370,546	10,370,546	1,667,552	12,038,098
	.18	Operations and Maintenance	399,800	26,087,878	14,685,800	4,414,163	21,600	311,500	45,520,941	8,356,505	53,877,446
	.19	Deactivation & Decommissioning									
		S Small Canister Underwater Loading System	**729,045**	**53,005,665**	**18,474,897**	**12,871,188**	**1,466,876**	**13,923,736**	**99,742,362**	**17,650,392**	**117,392,754**

Estimate Totals

Description	Amount	Totals	Hours	Rate	Cost Basis
Labor	53,005,665		729,044.532 hrs		
Material	18,474,897				
Subcontract	12,871,188				
Equipment	1,466,876		572.802 hrs		
Other	13,923,736				
	99,742,362	99,742,362			
Sales Tax	1,533,416			8.30000 %	C
Sales Tax on Rental Equip	121,751			8.30000 %	C
	1,655,167	101,397,529			
Construction General Req.	318,453			18.00000 %	C
	318,453	101,715,982			
FY2010 Escalation	285,579			2.00000 %	C
FY2011 Escalation	647,511			4.04000 %	C
FY2012 Escalation	1,151,384			6.12000 %	C
FY2013 Escalation	3,132,105			8.24300 %	C
FY2014 Escalation	1,258,225			10.40800 %	C
	6,474,804	108,190,786			
Site G&A on Markups	723,867			8.50000 %	O
Site G&A on Direct Costs	8,478,101			8.50000 %	C
	9,201,968	117,392,754			
Risk - Zero					C
Risk - Low					C
Risk - Low - Medium					C
Risk - Medium					C
Risk - Medium - High					C
Risk - High					C
		117,392,754			
Total		***117,392,754***			

WBS Lvl 1	WBS Lvl 2	WBS Lvl 3	Year	Description	Labor Man Hrs	Labor Amount	Material Amount	Sub Amount	Equip Amount	Other Amount	Total Amount	Addon Amount	Grand Total
S				Small Canister Underwater Loading System									
	.01			Project Management									
		.01.01		Project Management									
			FY10	Fiscal Year 2010	3,598	350,754					350,754	39,375	390,129
			FY11	Fiscal Year 2011	3,598	350,754					350,754	46,530	397,284
			FY12	Fiscal Year 2012	3,598	350,754					350,754	53,826	404,580
			FY13	Fiscal Year 2013	3,598	350,754					350,754	61,272	412,026
				.01.01 Project Management	14,394	1,403,016					1,403,016	201,003	1,604,019
		.01.02		Construction Management									
			FY12	Fiscal Year 2012	3,875	295,457					295,457	98,522	393,979
			FY13	Fiscal Year 2013	8,062	614,670					614,670	218,016	832,686
				.01.02 Construction Management	11,937	910,127					910,127	316,538	1,226,666
				.01 Project Management	26,331	2,313,144					2,313,144	517,541	2,830,685
	.02			Project Support									
		.02.01		Project/Facility Support									
			FY10	Fiscal Year 2010	900	74,191					74,191	8,329	82,520
			FY11	Fiscal Year 2011	1,872	154,317					154,317	20,471	174,789
			FY12	Fiscal Year 2012	1,872	154,317					154,317	23,681	177,998
			FY13	Fiscal Year 2013	1,872	154,317					154,317	26,957	181,275
				.02.01 Project/Facility Support	6,516	537,143					537,143	79,438	616,581
				.02 Project Support	6,516	537,143					537,143	79,438	616,581
	.03			Environmental Doc., Permitting, & Waste Acceptance									
		.03.01		Environmental Documentation									
			FY11	Fiscal Year 2011	2,535	210,389					210,389	27,910	238,298
			FY12	Fiscal Year 2012	520	43,150					43,150	6,622	49,771
				.03.01 Environmental Documentation	3,055	253,538					253,538	34,531	288,070
		.03.03		Waste Acceptance									
			FY12	Fiscal Year 2012	1,520	126,189					126,189	19,365	145,553
				.03.03 Waste Acceptance	1,520	126,189					126,189	19,365	145,553
				.03 Environmental Doc., Permitting, & Waste Acceptance	4,575	379,727					379,727	53,896	433,623
	.04			Nuclear Safety									
		.04.01		Nuclear Safety									
			FY10	Fiscal Year 2010	7,560	713,569					713,569	80,103	793,673
			FY11	Fiscal Year 2011	5,292	499,498					499,498	66,262	565,761
			FY12	Fiscal Year 2012	3,024	285,428					285,428	43,801	329,229
			FY13	Fiscal Year 2013	2,268	214,071					214,071	37,395	251,466
				.04.01 Nuclear Safety	18,144	1,712,566					1,712,566	227,562	1,940,128
				.04 Nuclear Safety	18,144	1,712,566					1,712,566	227,562	1,940,128
	.05			Radiological Control									
		.05.01		Radiological Control									
			FY10	Fiscal Year 2010	208	19,750					19,750	2,217	21,967

WBS Lvl 1	WBS Lvl 2	WBS Lvl 3	Year	Description	Labor Man Hrs	Labor Amount	Material Amount	Sub Amount	Equip Amount	Other Amount	Total Amount	Addon Amount	Grand Total
			FY11	Fiscal Year 2011	208	19,750					19,750	2,620	22,370
			FY12	Fiscal Year 2012	208	19,750					19,750	3,031	22,780
			FY13	Fiscal Year 2013	208	19,750					19,750	3,450	23,200
				.05.01 Radiological Control	832	78,998					78,998	11,318	90,316
				.05 Radiological Control	832	78,998					78,998	11,318	90,316
	.06			Industrial Safety									
		.06.01		Industrial Safety									
			FY10	Fiscal Year 2010	208	14,768					14,768	1,658	16,426
			FY11	Fiscal Year 2011	208	14,768					14,768	1,959	16,727
			FY12	Fiscal Year 2012	208	14,768					14,768	2,266	17,034
			FY13	Fiscal Year 2013	208	14,768					14,768	2,580	17,348
				.06.01 Industrial Safety	832	59,072					59,072	8,463	67,535
				.06 Industrial Safety	832	59,072					59,072	8,463	67,535
	.07			Quality Assurance									
		.07.01		Quality Assurance									
			FY10	Fiscal Year 2010	416	31,304					31,304	3,514	34,818
			FY11	Fiscal Year 2011	416	31,304					31,304	4,153	35,457
			FY12	Fiscal Year 2012	416	31,304					31,304	4,804	36,108
			FY13	Fiscal Year 2013	416	31,304					31,304	5,468	36,772
				.07.01 Quality Assurance	1,664	125,216					125,216	17,939	143,155
				.07 Quality Assurance	1,664	125,216					125,216	17,939	143,155
	.08			Safeguards & Security									
		.08.01		Safeguards & Security									
			FY10	Fiscal Year 2010	640	36,157					36,157	4,059	40,216
			FY11	Fiscal Year 2011	640	36,157					36,157	4,796	40,953
				.08.01 Safeguards & Security	1,280	72,314					72,314	8,855	81,169
				.08 Safeguards & Security	1,280	72,314					72,314	8,855	81,169
	.09			Technology Development									
		.09.01		Technology Development Testing									
			FY10	Fiscal Year 2010	8,320	761,550			100,000		861,550	105,015	966,566
			FY11	Fiscal Year 2011	8,320	761,550			250,000		1,011,550	154,940	1,166,490
			FY12	Fiscal Year 2012	8,320	761,550			100,000		861,550	140,511	1,002,062
				.09.01 Technology Development Testing	24,960	2,284,651			450,000		2,734,651	400,466	3,135,117
		.09.02		Technology Development Assessments									
			FY10	Fiscal Year 2010	8,320	761,550			100,000		861,550	105,015	966,566
			FY11	Fiscal Year 2011	8,320	761,550			250,000		1,011,550	154,940	1,166,490
			FY12	Fiscal Year 2012	8,320	761,550			100,000		861,550	140,511	1,002,062
				.09.02 Technology Development Assessments	24,960	2,284,651			450,000		2,734,651	400,466	3,135,117
		.09.03		Technology Maturation Plan									
			FY10	Fiscal Year 2010	8,320	761,550			100,000		861,550	105,015	966,566
			FY11	Fiscal Year 2011	8,320	761,550			250,000		1,011,550	154,940	1,166,490
			FY12	Fiscal Year 2012	8,320	761,550			100,000		861,550	140,511	1,002,062
				.09.03 Technology Maturation Plan	24,960	2,284,651			450,000		2,734,651	400,466	3,135,117

WBS Lvl 1	WBS Lvl 2	WBS Lvl 3	Year	Description	Labor Man Hrs	Labor Amount	Material Amount	Sub Amount	Equip Amount	Other Amount	Total Amount	Addon Amount	Grand Total
				.09 Technology Development	74,880	6,853,954			1,350,000		8,203,954	1,201,399	9,405,352
	.10			Conceptual Design									
		.10.01		**Conceptual Design**									
			FY10	**Fiscal Year 2010**	**16,800**	**1,440,096**					**1,440,096**	**161,661**	**1,601,757**
				.10.01 Conceptual Design	**16,800**	**1,440,096**					**1,440,096**	**161,661**	**1,601,757**
				.10 Conceptual Design	16,800	1,440,096					1,440,096	161,661	1,601,757
	.11			Preliminary Design									
		.11.01		**Preliminary Design**									
			FY11	**Fiscal Year 2011**	**25,120**	**2,153,286**					**2,153,286**	**285,649**	**2,438,936**
				.11.01 Preliminary Design	**25,120**	**2,153,286**					**2,153,286**	**285,649**	**2,438,936**
				.11 Preliminary Design	25,120	2,153,286					2,153,286	285,649	2,438,936
	.12			Final Design									
		.12.01		**Final Design**									
			FY12	**Fiscal Year 2012**	**50,240**	**4,306,573**					**4,306,573**	**660,875**	**4,967,448**
				.12.01 Final Design	**50,240**	**4,306,573**					**4,306,573**	**660,875**	**4,967,448**
				.12 Final Design	50,240	4,306,573					4,306,573	660,875	4,967,448
	.13			Engineering During Construction									
		.13.01		**Engineering During Construction**									
			FY13	**Fiscal Year 2013**	**33,440**	**2,866,477**					**2,866,477**	**500,737**	**3,367,214**
				.13.01 Engineering During Construction	**33,440**	**2,866,477**					**2,866,477**	**500,737**	**3,367,214**
				.13 Engineering During Construction	33,440	2,866,477					2,866,477	500,737	3,367,214
	.14			Procurement									
		.14.01		**Procurement Support**									
			FY12	**Fiscal Year 2012**	**1,560**	**91,926**					**91,926**	**14,107**	**106,032**
			FY13	**Fiscal Year 2013**	**600**	**35,356**					**35,356**	**6,176**	**41,532**
				.14.01 Procurement Support	**2,160**	**127,282**					**127,282**	**20,283**	**147,565**
		.14.02		**Equipment Procurement**									
			FY13	**Fiscal Year 2013**	**1,778**	**137,622**	**3,550,149**	**8,048,907**	**42,452**	**3,241,690**	**15,020,821**	**2,922,134**	**17,942,954**
				.14.02 Equipment Procurement	**1,778**	**137,622**	**3,550,149**	**8,048,907**	**42,452**	**3,241,690**	**15,020,821**	**2,922,134**	**17,942,954**
				.14 Procurement	3,938	264,904	3,550,149	8,048,907	42,452	3,241,690	15,148,102	2,942,416	18,090,519
	.15			Construction									
		.15.03		**Bldg. Modifications**									
			FY13	**Fiscal Year 2013**	**9,706**	**564,926**	**238,949**	**408,118**	**52,823**		**1,264,816**	**399,794**	**1,664,611**
				.15.03 Bldg. Modifications	**9,706**	**564,926**	**238,949**	**408,118**	**52,823**		**1,264,816**	**399,794**	**1,664,611**
				.15 Construction	9,706	564,926	238,949	408,118	52,823		1,264,816	399,794	1,664,611
	.16			Start up & Testing									
		.16.01		**Start up & Testing**									
			FY13	**Fiscal Year 2013**	**240**	**19,296**					**19,296**	**3,371**	**22,667**
				.16.01 Start up & Testing	**240**	**19,296**					**19,296**	**3,371**	**22,667**
		.16.02		**Procedure Development**									
			FY12	**Fiscal Year 2012**	**7,197**	**393,665**					**393,665**	**60,411**	**454,076**
			FY13	**Fiscal Year 2013**	**14,994**	**833,220**					**833,220**	**145,553**	**978,773**
				.16.02 Procedure Development	**22,190**	**1,226,885**					**1,226,885**	**205,964**	**1,432,849**
		.16.03		**Readiness Activities / Planning**									

WBS Lvl 1	WBS Lvl 2	WBS Lvl 3	Year	Description	Labor Man Hrs	Labor Amount	Material Amount	Sub Amount	Equip Amount	Other Amount	Total Amount	Addon Amount	Grand Total
			FY13	Fiscal Year 2013	28,597	1,658,324					1,658,324	289,688	1,948,012
				.16.03 Readiness Activities / Planning	28,597	1,658,324					1,658,324	289,688	1,948,012
		.16.04		System Test									
			FY13	Fiscal Year 2013	1,600	130,970					130,970	22,879	153,848
				.16.04 System Test	1,600	130,970					130,970	22,879	153,848
		.16.05		Start Up									
			FY13	Fiscal Year 2013	2,320	153,918					153,918	26,887	180,805
				.16.05 Start Up	2,320	153,918					153,918	26,887	180,805
				.16 Start up & Testing	54,947	3,189,392					3,189,392	548,789	3,738,181
	.17			Risk									
		.17.01		Risk									
			FY10	Fiscal Year 2010						789,786	789,786	88,659	878,445
			FY11	Fiscal Year 2011						1,298,724	1,298,724	172,285	1,471,009
			FY12	Fiscal Year 2012						1,891,626	1,891,626	290,284	2,181,910
			FY13	Fiscal Year 2013						6,390,410	6,390,410	1,116,324	7,506,734
				.17.01 Risk						10,370,546	10,370,546	1,667,552	12,038,098
				.17 Risk						10,370,546	10,370,546	1,667,552	12,038,098
	.18			Operations and Maintenance									
		.18.01		Operations									
			FY14	Fiscal Year 2014	43,684	2,560,767					2,560,767	502,774	3,063,542
			FY15	Fiscal Year 2015	6,721	393,964					393,964	36,346	430,310
				.18.01 Operations	50,405	2,954,731					2,954,731	539,120	3,493,852
		.18.02		Transportation									
			FY14	Fiscal Year 2014				925,135			925,135	181,639	1,106,773
			FY15	Fiscal Year 2015				142,328			142,328	13,131	155,459
				.18.02 Transportation				1,067,463			1,067,463	194,769	1,262,233
		.18.03		Maintenance									
			FY10	Fiscal Year 2010	68,823	4,561,267	2,931,000	669,340		62,300	8,223,907	1,166,467	9,390,374
			FY11	Fiscal Year 2011	68,823	4,561,267	2,931,000	669,340		62,300	8,223,907	1,334,235	9,558,141
			FY12	Fiscal Year 2012	68,823	4,561,267	2,931,000	669,340		62,300	8,223,907	1,505,292	9,729,199
			FY13	Fiscal Year 2013	68,823	4,561,267	2,931,000	669,340		62,300	8,223,907	1,679,886	9,903,792
			FY14	Fiscal Year 2014	74,103	4,888,079	2,961,800	669,340	21,600	62,300	8,603,119	1,936,736	10,539,855
				.18.03 Maintenance	349,395	23,133,146	14,685,800	3,346,699	21,600	311,500	41,498,746	7,622,616	49,121,361
				.18 Operations and Maintenance	399,800	26,087,878	14,685,800	4,414,163	21,600	311,500	45,520,941	8,356,505	53,877,446
	.19			Deactivation & Decommissioning									
		.19.01		Deactivation & Decommissioning									
			FY14	Fiscal Year 2014									
		.19.02		Demolition									
			FY15	Fiscal Year 2015									
		.19.03		Site Restoration									
			FY15	Fiscal Year 2015									
				S Small Canister Underwater Loading System	**729,045**	**53,005,665**	**18,474,897**	**12,871,188**	**1,466,876**	**13,923,736**	**99,742,362**	**17,650,392**	**117,392,754**

CH2MHILL

Spreadsheet Report

Small Canister rev1

WBS Lvl 1	WBS Lvl 2	WBS Lvl 3	Year	Sch Acty	Description	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
S					Small Canister Underwater Loading System																	
	.01				Project Management																	
		.01.01			**Project Management**																	
			FY10		**Fiscal Year 2010**																	
				LS01010110	Project Management					3,598	350,754									350,754	39,375	390,129
					FY10 Fiscal Year 2010					**3,598**	**350,754**									**350,754**	**39,375**	**390,129**
			FY11		**Fiscal Year 2011**																	
				LS01010111	Project Management					3,598	350,754									350,754	46,530	397,284
					FY11 Fiscal Year 2011					**3,598**	**350,754**									**350,754**	**46,530**	**397,284**
			FY12		**Fiscal Year 2012**																	
				LS01010112	Project Management					3,598	350,754									350,754	53,826	404,580
					FY12 Fiscal Year 2012					**3,598**	**350,754**									**350,754**	**53,826**	**404,580**
			FY13		**Fiscal Year 2013**																	
				LS01010113	Project Management					3,598	350,754									350,754	61,272	412,026
					FY13 Fiscal Year 2013					**3,598**	**350,754**									**350,754**	**61,272**	**412,026**
					.01.01 Project Management					**14,394**	**1,403,016**									**1,403,016**	**201,003**	**1,604,019**
		.01.02			**Construction Management**																	
			FY12		**Fiscal Year 2012**																	
				LS01010212	Construction Management					3,875	295,457									295,457	98,522	393,979
					FY12 Fiscal Year 2012					**3,875**	**295,457**									**295,457**	**98,522**	**393,979**
			FY13		**Fiscal Year 2013**																	
				LS01010213	Construction Management					8,062	614,670									614,670	218,016	832,686
					FY13 Fiscal Year 2013					**8,062**	**614,670**									**614,670**	**218,016**	**832,686**
					.01.02 Construction Management					**11,937**	**910,127**									**910,127**	**316,538**	**1,226,666**
					.01 Project Management					26,331	2,313,144									2,313,144	517,541	2,830,685
	.02				Project Support																	
		.02.01			**Project/Facility Support**																	
			FY10		**Fiscal Year 2010**																	
				LS02010110	Project/Facility Support					900	74,191									74,191	8,329	82,520
					FY10 Fiscal Year 2010					**900**	**74,191**									**74,191**	**8,329**	**82,520**
			FY11		**Fiscal Year 2011**																	
				LS02010111	Project/Facility Support					1,872	154,317									154,317	20,471	174,789
					FY11 Fiscal Year 2011					**1,872**	**154,317**									**154,317**	**20,471**	**174,789**
			FY12		**Fiscal Year 2012**																	
				LS02010112	Project/Facility Support					1,872	154,317									154,317	23,681	177,998
					FY12 Fiscal Year 2012					**1,872**	**154,317**									**154,317**	**23,681**	**177,998**
			FY13		**Fiscal Year 2013**																	
				LS02010113	Project/Facility Support					1,872	154,317									154,317	26,957	181,275
					FY13 Fiscal Year 2013					**1,872**	**154,317**									**154,317**	**26,957**	**181,275**
					.02.01 Project/Facility Support					**6,516**	**537,143**									**537,143**	**79,438**	**616,581**
					.02 Project Support					6,516	537,143									537,143	79,438	616,581
	.03				Environmental Doc., Permitting, & Waste Acceptance																	
		.03.01			**Environmental Documentation**																	
			FY11		**Fiscal Year 2011**																	
				LS03010111	CERCLA Documentation					2,015	167,239									167,239	22,186	189,425
				LS03010211	Review Support					520	43,150									43,150	5,724	48,874
					FY11 Fiscal Year 2011					**2,535**	**210,389**									**210,389**	**27,910**	**238,298**
			FY12		**Fiscal Year 2012**																	
				LS03010212	Review Support					520	43,150									43,150	6,622	49,771
					FY12 Fiscal Year 2012					**520**	**43,150**									**43,150**	**6,622**	**49,771**
					.03.01 Environmental Documentation					**3,055**	**253,538**									**253,538**	**34,531**	**288,070**
		.03.03			**Waste Acceptance**																	
			FY12		**Fiscal Year 2012**																	
				LS03030112	Waste Acceptance					1,520	126,189									126,189	19,365	145,553
					FY12 Fiscal Year 2012					**1,520**	**126,189**									**126,189**	**19,365**	**145,553**
					.03.03 Waste Acceptance					**1,520**	**126,189**									**126,189**	**19,365**	**145,553**
					.03 Environmental Doc., Permitting, & Waste Acceptance					4,575	379,727									379,727	53,896	433,623
	.04				Nuclear Safety																	
		.04.01			**Nuclear Safety**																	
			FY10		**Fiscal Year 2010**																	
				LS04010110	Hazard Analysis					760	72,162									72,162	8,101	80,263
				LS04010210	Accident Analysis					1,440	136,728									136,728	15,349	152,077
				LS04010310	Thermal/Gas Analysis Update(HNF-10858, SNF-18135,HNF-12563)					520	49,374									49,374	5,543	54,917
				LS04010410	GAP Analysis					320	26,131									26,131	2,933	29,065
				LS04010510	Control Definitions					800	75,960									75,960	8,527	84,487
				LS04010610	Conceptual Safety Design Report					1,440	136,728									136,728	15,349	152,077
				LS04010710	Criticality Safety Analysis					480	45,576									45,576	5,116	50,692
				LS04010910	Fire Hazard Analysis					240	22,788									22,788	2,558	25,346
				LS04011010	EPHA					1,560	148,122									148,122	16,628	164,750
					FY10 Fiscal Year 2010					**7,560**	**713,569**									**713,569**	**80,103**	**793,673**
			FY11		**Fiscal Year 2011**																	
				LS04010111	Hazard Analysis					532	50,513									50,513	6,701	57,214
				LS04010211	Accident Analysis					1,008	95,710									95,710	12,697	108,406
				LS04010311	Thermal/Gas Analysis Update(HNF-10858, SNF-18135,HNF-12563)					364	34,562									34,562	4,585	39,147

WBS Lvl 1	WBS Lvl 2	WBS Lvl 3	Year	Sch Acty	Description	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
				LS04010411	GAP Analysis					224	18,292									18,292	2,427	20,718
				LS04010511	Control Definitions					560	53,172									53,172	7,054	60,226
				LS04010611	Preliminary Safety Design Report					1,008	95,710									95,710	12,697	108,406
				LS04010711	Criticality Safety Analysis					336	31,903									31,903	4,232	36,135
				LS04010911	Fire Hazard Analysis					168	15,952									15,952	2,116	18,068
				LS04011011	EPHA					1,092	103,685									103,685	13,755	117,440
					FY11 Fiscal Year 2011					**5,292**	**499,498**									**499,498**	**66,262**	**565,761**
			FY12		**Fiscal Year 2012**																	
				LS04010112	Hazard Analysis					304	28,865									28,865	4,430	33,294
				LS04010212	Accident Analysis					576	54,691									54,691	8,393	63,084
				LS04010312	Thermal/Gas Analysis Update(HNF-10858, SNF-18135,HNF-12563)					208	19,750									19,750	3,031	22,780
				LS04010412	GAP Analysis					128	10,452									10,452	1,604	12,056
				LS04010512	Control Definitions					320	30,384									30,384	4,663	35,047
				LS04010612	Preliminary Safety Design Report					576	54,691									54,691	8,393	63,084
				LS04010712	Criticality Safety Analysis					192	18,230									18,230	2,798	21,028
				LS04010912	Fire Hazard Analysis					96	9,115									9,115	1,399	10,514
				LS04011012	EPHA					624	59,249									59,249	9,092	68,341
					FY12 Fiscal Year 2012					**3,024**	**285,428**									**285,428**	**43,801**	**329,229**
			FY13		**Fiscal Year 2013**																	
				LS04010113	Hazard Analysis					228	21,649									21,649	3,782	25,430
				LS04010213	Accident Analysis					432	41,018									41,018	7,165	48,184
				LS04010313	Thermal/Gas Analysis Update(HNF-10858, SNF-18135,HNF-12563)					156	14,812									14,812	2,588	17,400
				LS04010413	GAP Analysis					96	7,839									7,839	1,369	9,209
				LS04010513	Control Definitions					240	22,788									22,788	3,981	26,769
				LS04010613	Conceptual Safety Design Report					432	41,018									41,018	7,165	48,184
				LS04010713	Criticality Safety Analysis					144	13,673									13,673	2,388	16,061
				LS04010913	Fire Hazard Analysis					72	6,836									6,836	1,194	8,031
				LS04011013	EPHA					468	44,437									44,437	7,763	52,199
					FY13 Fiscal Year 2013					**2,268**	**214,071**									**214,071**	**37,395**	**251,466**
					.04.01 Nuclear Safety					**18,144**	**1,712,566**									**1,712,566**	**227,562**	**1,940,128**
					.04 Nuclear Safety					18,144	1,712,566									1,712,566	227,562	1,940,128
	.05				Radiological Control																	
		.05.01			**Radiological Control**																	
			FY10		**Fiscal Year 2010**																	
				LS05050110	Radiological Control					208	19,750									19,750	2,217	21,967
					FY10 Fiscal Year 2010					**208**	**19,750**									**19,750**	**2,217**	**21,967**
			FY11		**Fiscal Year 2011**																	
				LS05050111	Radiological Control					208	19,750									19,750	2,620	22,370
					FY11 Fiscal Year 2011					**208**	**19,750**									**19,750**	**2,620**	**22,370**
			FY12		**Fiscal Year 2012**																	
				LS05050112	Radiological Control					208	19,750									19,750	3,031	22,780
					FY12 Fiscal Year 2012					**208**	**19,750**									**19,750**	**3,031**	**22,780**
			FY13		**Fiscal Year 2013**																	
				LS05050113	Radiological Control					208	19,750									19,750	3,450	23,200
					FY13 Fiscal Year 2013					**208**	**19,750**									**19,750**	**3,450**	**23,200**
					.05.01 Radiological Control					**832**	**78,998**									**78,998**	**11,318**	**90,316**
					.05 Radiological Control					832	78,998									78,998	11,318	90,316
	.06				Industrial Safety																	
		.06.01			**Industrial Safety**																	
			FY10		**Fiscal Year 2010**																	
				LS06060110	Industrial Safety					208	14,768									14,768	1,658	16,426
					FY10 Fiscal Year 2010					**208**	**14,768**									**14,768**	**1,658**	**16,426**
			FY11		**Fiscal Year 2011**																	
				LS06060111	Industrial Safety					208	14,768									14,768	1,959	16,727
					FY11 Fiscal Year 2011					**208**	**14,768**									**14,768**	**1,959**	**16,727**
			FY12		**Fiscal Year 2012**																	
				LS06060112	Industrial Safety					208	14,768									14,768	2,266	17,034
					FY12 Fiscal Year 2012					**208**	**14,768**									**14,768**	**2,266**	**17,034**
			FY13		**Fiscal Year 2013**																	
				LS06060113	Industrial Safety					208	14,768									14,768	2,580	17,348
					FY13 Fiscal Year 2013					**208**	**14,768**									**14,768**	**2,580**	**17,348**
					.06.01 Industrial Safety					**832**	**59,072**									**59,072**	**8,463**	**67,535**
					.06 Industrial Safety					832	59,072									59,072	8,463	67,535
	.07				Quality Assurance																	
		.07.01			**Quality Assurance**																	
			FY10		**Fiscal Year 2010**																	
				LS07070110	Quality Assurance					416	31,304									31,304	3,514	34,818
					FY10 Fiscal Year 2010					**416**	**31,304**									**31,304**	**3,514**	**34,818**
			FY11		**Fiscal Year 2011**																	
				LS07070111	Quality Assurance					416	31,304									31,304	4,153	35,457
					FY11 Fiscal Year 2011					**416**	**31,304**									**31,304**	**4,153**	**35,457**
			FY12		**Fiscal Year 2012**																	
				LS07070112	Quality Assurance					416	31,304									31,304	4,804	36,108
					FY12 Fiscal Year 2012					**416**	**31,304**									**31,304**	**4,804**	**36,108**
			FY13		**Fiscal Year 2013**																	
				LS07070113	Quality Assurance					416	31,304									31,304	5,468	36,772
					FY13 Fiscal Year 2013					**416**	**31,304**									**31,304**	**5,468**	**36,772**

WBS Lvl 1	WBS Lvl 2	WBS Lvl 3	Year	Sch Acty	Description	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
					.07.01 Quality Assurance					**1,664**	**125,216**									**125,216**	**17,939**	**143,155**
					.07 Quality Assurance					1,664	125,216									125,216	17,939	143,155
	.08				Safeguards & Security																	
		.08.01			**Safeguards & Security**																	
			FY10		**Fiscal Year 2010**																	
				LS08080110	Design Review Of Conceptual Design					640	36,157									36,157	4,059	40,216
					FY10 Fiscal Year 2010					**640**	**36,157**									**36,157**	**4,059**	**40,216**
			FY11		**Fiscal Year 2011**																	
				LS08080111	Vulnerability Assessment					640	36,157									36,157	4,796	40,953
					FY11 Fiscal Year 2011					**640**	**36,157**									**36,157**	**4,796**	**40,953**
					.08.01 Safeguards & Security					**1,280**	**72,314**									**72,314**	**8,855**	**81,169**
					.08 Safeguards & Security					1,280	72,314									72,314	8,855	81,169
	.09				Technology Development																	
		.09.01			**Technology Development Testing**																	
			FY10		**Fiscal Year 2010**																	
				LS09090110	Componet/Scale Testing TRL 3					8,320	761,550						100,000			861,550	105,015	966,566
					FY10 Fiscal Year 2010					**8,320**	**761,550**						**100,000**			**861,550**	**105,015**	**966,566**
			FY11		**Fiscal Year 2011**																	
				LS09090111	Engineering Scale TRL 5					8,320	761,550						250,000			1,011,550	154,940	1,166,490
					FY11 Fiscal Year 2011					**8,320**	**761,550**						**250,000**			**1,011,550**	**154,940**	**1,166,490**
			FY12		**Fiscal Year 2012**																	
				LS09090112	Full Scale TRL 7					8,320	761,550						100,000			861,550	140,511	1,002,062
					FY12 Fiscal Year 2012					**8,320**	**761,550**						**100,000**			**861,550**	**140,511**	**1,002,062**
					.09.01 Technology Development Testing					**24,960**	**2,284,651**						**450,000**			**2,734,651**	**400,466**	**3,135,117**
		.09.02			**Technology Development Assessments**																	
			FY10		**Fiscal Year 2010**																	
				LS09090210	Componet/Scale Testing TRL 3					8,320	761,550						100,000			861,550	105,015	966,566
					FY10 Fiscal Year 2010					**8,320**	**761,550**						**100,000**			**861,550**	**105,015**	**966,566**
			FY11		**Fiscal Year 2011**																	
				LS09090211	Engineering Scale TRL 5					8,320	761,550						250,000			1,011,550	154,940	1,166,490
					FY11 Fiscal Year 2011					**8,320**	**761,550**						**250,000**			**1,011,550**	**154,940**	**1,166,490**
			FY12		**Fiscal Year 2012**																	
				LS09090212	Full Scale TRL 7					8,320	761,550						100,000			861,550	140,511	1,002,062
					FY12 Fiscal Year 2012					**8,320**	**761,550**						**100,000**			**861,550**	**140,511**	**1,002,062**
					.09.02 Technology Development Assessments					**24,960**	**2,284,651**						**450,000**			**2,734,651**	**400,466**	**3,135,117**
		.09.03			**Technology Maturation Plan**																	
			FY10		**Fiscal Year 2010**																	
				LS09090310	Componet/Scale Testing TRL 3					8,320	761,550						100,000			861,550	105,015	966,566
					FY10 Fiscal Year 2010					**8,320**	**761,550**						**100,000**			**861,550**	**105,015**	**966,566**
			FY11		**Fiscal Year 2011**																	
				LS09090311	Engineering Scale TRL 5					8,320	761,550						250,000			1,011,550	154,940	1,166,490
					FY11 Fiscal Year 2011					**8,320**	**761,550**						**250,000**			**1,011,550**	**154,940**	**1,166,490**
			FY12		**Fiscal Year 2012**																	
				LS09090312	Full Scale TRL 7					8,320	761,550						100,000			861,550	140,511	1,002,062
					FY12 Fiscal Year 2012					**8,320**	**761,550**						**100,000**			**861,550**	**140,511**	**1,002,062**
					.09.03 Technology Maturation Plan					**24,960**	**2,284,651**						**450,000**			**2,734,651**	**400,466**	**3,135,117**
					.09 Technology Development					74,880	6,853,954						1,350,000			8,203,954	1,201,399	9,405,352
	.10				Conceptual Design																	
		.10.01			**Conceptual Design**																	
			FY10		**Fiscal Year 2010**																	
				LS10100110	Conceptual Design					16,800	1,440,096									1,440,096	161,661	1,601,757
					FY10 Fiscal Year 2010					**16,800**	**1,440,096**									**1,440,096**	**161,661**	**1,601,757**
					.10.01 Conceptual Design					**16,800**	**1,440,096**									**1,440,096**	**161,661**	**1,601,757**
					.10 Conceptual Design					16,800	1,440,096									1,440,096	161,661	1,601,757
	.11				Preliminary Design																	
		.11.01			**Preliminary Design**																	
			FY11		**Fiscal Year 2011**																	
				LS11110111	Preliminary Design					25,120	2,153,286									2,153,286	285,649	2,438,936
					FY11 Fiscal Year 2011					**25,120**	**2,153,286**									**2,153,286**	**285,649**	**2,438,936**
					.11.01 Preliminary Design					**25,120**	**2,153,286**									**2,153,286**	**285,649**	**2,438,936**
					.11 Preliminary Design					25,120	2,153,286									2,153,286	285,649	2,438,936
	.12				Final Design																	
		.12.01			**Final Design**																	
			FY12		**Fiscal Year 2012**																	
				LS12120112	Final Design					50,240	4,306,573									4,306,573	660,875	4,967,448
					FY12 Fiscal Year 2012					**50,240**	**4,306,573**									**4,306,573**	**660,875**	**4,967,448**
					.12.01 Final Design					**50,240**	**4,306,573**									**4,306,573**	**660,875**	**4,967,448**
					.12 Final Design					50,240	4,306,573									4,306,573	660,875	4,967,448
	.13				Engineering During Construction																	
		.13.01			**Engineering During Construction**																	
			FY13		**Fiscal Year 2013**																	
				LS13130113	Engineering During Construction					33,440	2,866,477									2,866,477	500,737	3,367,214
					FY13 Fiscal Year 2013					**33,440**	**2,866,477**									**2,866,477**	**500,737**	**3,367,214**
					.13.01 Engineering During Construction					**33,440**	**2,866,477**									**2,866,477**	**500,737**	**3,367,214**
					.13 Engineering During Construction					33,440	2,866,477									2,866,477	500,737	3,367,214
	.14				Procurement																	
		.14.01			**Procurement Support**																	
			FY12		**Fiscal Year 2012**																	
				LS14140112	Procurement Support					1,560	91,926									91,926	14,107	106,032

WBS Lvl 1	WBS Lvl 2	WBS Lvl 3	Year	Sch Acty	Description	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
					FY12 Fiscal Year 2012					**1,560**	**91,926**									**91,926**	**14,107**	**106,032**
			FY13		**Fiscal Year 2013**																	
				LS14140113	Procurement Support					600	35,356									35,356	6,176	41,532
					FY13 Fiscal Year 2013					**600**	**35,356**									**35,356**	**6,176**	**41,532**
					.14.01 Procurement Support					**2,160**	**127,282**									**127,282**	**20,283**	**147,565**
		.14.02			**Equipment Procurement**																	
			FY13		**Fiscal Year 2013**																	
				LS14020113	Equipment Procurement					380	27,337	3,534,616			300,000		40,000			3,901,953	976,315	4,880,268
				LS14031013	Purchase SA Robotics Equipment										7,748,907				3,241,690	10,990,597	1,919,918	12,910,515
				LS14031113	Tray & Canister Jig TPlant Crane	Enable T Plant Crane to move tray and canisters				640	56,109	10,000								66,109	12,378	78,487
				LS14031213	Secondary spill containment tray					759	54,176	5,533					2,452			62,162	11,522	73,684
					FY13 Fiscal Year 2013					**1,778**	**137,622**	**3,550,149**		**8,048,907**			**42,452**		**3,241,690**	**15,020,821**	**2,922,134**	**17,942,954**
					.14.02 Equipment Procurement					**1,778**	**137,622**	**3,550,149**		**8,048,907**			**42,452**		**3,241,690**	**15,020,821**	**2,922,134**	**17,942,954**
					.14 Procurement					3,938	264,904	3,550,149		8,048,907			42,452		3,241,690	15,148,102	2,942,416	18,090,519
	.15				Construction																	
		.15.03			**Bldg. Modifications**																	
			FY13		**Fiscal Year 2013**																	
				LS15030213	Field Office & Supplies										79,118					79,118	28,062	107,180
				LS15030313	Demolition & Bldg Seperation					179	9,139	1,500								10,639	3,898	14,537
				LS15030513	Electrical					2,893	174,120	76,668								250,788	95,315	346,103
				LS15030913	HVAC					459	27,203	891					20,000			48,094	18,792	66,887
				LS15031613	INSTRUMENTATION					807	44,692	71,352								116,044	47,081	163,125
				LS15031713	Mechanical					1,769	97,996	50,366					4,752			153,114	58,882	211,996
				LS18010414	Clean out &Decon existing Annex	Reactivate FTS system				775	44,959									44,959	7,854	52,813
				LS18010514	Clean out 1 additional cell at TPlant					160	9,839	21,962			329,000					360,801	64,850	425,651
				LS18010614	Install new Cell equipment	Additional Cell				2,664	156,978	16,210					28,071			201,259	75,059	276,319
					FY13 Fiscal Year 2013					**9,706**	**564,926**	**238,949**		**408,118**			**52,823**			**1,264,816**	**399,794**	**1,664,611**
					.15.03 Bldg. Modifications					**9,706**	**564,926**	**238,949**		**408,118**			**52,823**			**1,264,816**	**399,794**	**1,664,611**
					.15 Construction					9,706	564,926	238,949		408,118			52,823			1,264,816	399,794	1,664,611
	.16				Start up & Testing																	
		.16.01			**Start up & Testing**																	
			FY13		**Fiscal Year 2013**																	
				LS16160113	CORAMI Evalation					240	19,296									19,296	3,371	22,667
					FY13 Fiscal Year 2013					**240**	**19,296**									**19,296**	**3,371**	**22,667**
					.16.01 Start up & Testing					**240**	**19,296**									**19,296**	**3,371**	**22,667**
		.16.02			**Procedure Development**																	
			FY12		**Fiscal Year 2012**																	
				LS16020412	NCO Support Prior to ORR					7,197	393,665									393,665	60,411	454,076
					FY12 Fiscal Year 2012					**7,197**	**393,665**									**393,665**	**60,411**	**454,076**
			FY13		**Fiscal Year 2013**																	
				LS16020113	Procedure Development Retrieval System					520	40,074									40,074	7,001	47,075
				LS16020213	Procedure Development FTS System	Reactivate FTS system				80	5,816									5,816	1,016	6,832
				LS16020413	NCO Support during ORR					14,394	787,330									787,330	137,537	924,867
					FY13 Fiscal Year 2013					**14,994**	**833,220**									**833,220**	**145,553**	**978,773**
					.16.02 Procedure Development					**22,190**	**1,226,885**									**1,226,885**	**205,964**	**1,432,849**
		.16.03			**Readiness Activities / Planning**																	
			FY13		**Fiscal Year 2013**																	
				LS16030113	Crew Training & ORR Preparations					27,877	1,599,697									1,599,697	279,447	1,879,144
				LS16160313	Readiness Activities / Planning					720	58,627									58,627	10,241	68,869
					FY13 Fiscal Year 2013					**28,597**	**1,658,324**									**1,658,324**	**289,688**	**1,948,012**
					.16.03 Readiness Activities / Planning					**28,597**	**1,658,324**									**1,658,324**	**289,688**	**1,948,012**
		.16.04			**System Test**																	
			FY13		**Fiscal Year 2013**																	
				LS16160413	System Test					1,600	130,970									130,970	22,879	153,848
					FY13 Fiscal Year 2013					**1,600**	**130,970**									**130,970**	**22,879**	**153,848**
					.16.04 System Test					**1,600**	**130,970**									**130,970**	**22,879**	**153,848**
		.16.05			**Start Up**																	
			FY13		**Fiscal Year 2013**																	
				LS16050113	System Start Up					1,440	94,715									94,715	16,546	111,261
				LS16050213	FTS Crane Inspection & Startup	Reactivate FTS system				720	46,529									46,529	8,128	54,657
				LS16050313	Update FTS System Software for PLC	Reactivate FTS system				160	12,674									12,674	2,214	14,888
					FY13 Fiscal Year 2013					**2,320**	**153,918**									**153,918**	**26,887**	**180,805**
					.16.05 Start Up					**2,320**	**153,918**									**153,918**	**26,887**	**180,805**
					.16 Start up & Testing					54,947	3,189,392									3,189,392	548,789	3,738,181
.17					Risk																	
		.17.01			**Risk**																	
			FY10		**Fiscal Year 2010**																	
				LS17170110	Risk														789,786	789,786	88,659	878,445
					FY10 Fiscal Year 2010														**789,786**	**789,786**	**88,659**	**878,445**
			FY11		**Fiscal Year 2011**																	
				LS17170111	Risk														1,298,724	1,298,724	172,285	1,471,009
					FY11 Fiscal Year 2011														**1,298,724**	**1,298,724**	**172,285**	**1,471,009**
			FY12		**Fiscal Year 2012**																	
				LS17170112	Risk														1,891,626	1,891,626	290,284	2,181,910
					FY12 Fiscal Year 2012														**1,891,626**	**1,891,626**	**290,284**	**2,181,910**
			FY13		**Fiscal Year 2013**																	
				LS17170113	Risk														6,390,410	6,390,410	1,116,324	7,506,734

WBS Lvl 1	WBS Lvl 2	WBS Lvl 3	Year	Sch Acty	Description	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
					FY13 Fiscal Year 2013														**6,390,410**	**6,390,410**	**1,116,324**	**7,506,734**
					.17.01 Risk														**10,370,546**	**10,370,546**	**1,667,552**	**12,038,098**
					.17 Risk														10,370,546	10,370,546	1,667,552	12,038,098
.18					Operations and Maintenance																	
		.18.01			**Operations**																	
			FY14		**Fiscal Year 2014**																	
				LS18010114	XAGO operation and Container Loading					27.877	1,599,697									1,599,697	314,080	1,913,777
				LS18010314	Small Canister Unloading @ Tplant					15.808	961,070									961,070	188,694	1,149,764
					FY14 Fiscal Year 2014					**43,684**	**2,560,767**									**2,560,767**	**502,774**	**3,063,542**
			FY15		**Fiscal Year 2015**																	
				LS18010114	XAGO operation and Container Loading					4.289	246,107									246,107	22,705	268,812
				LS18010314	Small Canister Unloading @ Tplant					2.432	147,857									147,857	13,641	161,498
					FY15 Fiscal Year 2015					**6,721**	**393,964**									**393,964**	**36,346**	**430,310**
					.18.01 Operations					**50,405**	**2,954,731**									**2,954,731**	**539,120**	**3,493,852**
		.18.02			**Transportation**																	
			FY14		**Fiscal Year 2014**																	
				LS18020114	Transport										925,135					925,135	181,639	1,106,773
					FY14 Fiscal Year 2014										**925,135**					**925,135**	**181,639**	**1,106,773**
			FY15		**Fiscal Year 2015**																	
				LS18020115	Transport										142,328					142,328	13,131	155,459
					FY15 Fiscal Year 2015										**142,328**					**142,328**	**13,131**	**155,459**
					.18.02 Transportation										**1,067,463**					**1,067,463**	**194,769**	**1,262,233**
		.18.03			**Maintenance**																	
			FY10		**Fiscal Year 2010**																	
				LS18030210	K West Basin Min Safe					68,823	4,561,267		2,931,000		669,340				62,300	8,223,907	1,166,467	9,390,374
					FY10 Fiscal Year 2010					**68,823**	**4,561,267**		**2,931,000**		**669,340**				**62,300**	**8,223,907**	**1,166,467**	**9,390,374**
			FY11		**Fiscal Year 2011**																	
				LS18030211	K West Basin Min Safe					68,823	4,561,267		2,931,000		669,340				62,300	8,223,907	1,334,235	9,558,141
					FY11 Fiscal Year 2011					**68,823**	**4,561,267**		**2,931,000**		**669,340**				**62,300**	**8,223,907**	**1,334,235**	**9,558,141**
			FY12		**Fiscal Year 2012**																	
				LS18030212	K West Basin Min Safe					68,823	4,561,267		2,931,000		669,340				62,300	8,223,907	1,505,292	9,729,199
					FY12 Fiscal Year 2012					**68,823**	**4,561,267**		**2,931,000**		**669,340**				**62,300**	**8,223,907**	**1,505,292**	**9,729,199**
			FY13		**Fiscal Year 2013**																	
				LS18030213	K West Basin Min Safe					68,823	4,561,267		2,931,000		669,340				62,300	8,223,907	1,679,886	9,903,792
					FY13 Fiscal Year 2013					**68,823**	**4,561,267**		**2,931,000**		**669,340**				**62,300**	**8,223,907**	**1,679,886**	**9,903,792**
			FY14		**Fiscal Year 2014**																	
				LS18030114	Maintenance								10,800				21,600			32,400	9,051	41,451
				LS18030214	K West Basin Min Safe					68,823	4,561,267		2,931,000		669,340				62,300	8,223,907	1,857,933	10,081,840
				LS18030314	FTS Transfer System Maintenance Phase 1	Replace 4 traveling nuts and 12 acorn nuts on FTS transfer system				2.640	163,406		10,000							173,406	34,876	208,283
				LS18030414	FTS Transfer System Maintenance Phase 2	Replace 4 traveling nuts and 12 acorn nuts on FTS transfer system				2.640	163,406		10,000							173,406	34,876	208,283
					FY14 Fiscal Year 2014					**74,103**	**4,888,079**		**2,961,800**		**669,340**		**21,600**		**62,300**	**8,603,119**	**1,936,736**	**10,539,855**
					.18.03 Maintenance					**349,395**	**23,133,146**		**14,685,800**		**3,346,699**		**21,600**		**311,500**	**41,498,746**	**7,622,616**	**49,121,361**
					.18 Operations and Maintenance					399,800	26,087,878		14,685,800		4,414,163		21,600		311,500	45,520,941	8,356,505	53,877,446
.19					Deactivation & Decommissioning																	
		.19.01			**Deactivation & Decommissioning**																	
			FY14		**Fiscal Year 2014**																	
				LS19190114	D&D Planning																	
		.19.02			**Demolition**																	
			FY15		**Fiscal Year 2015**																	
				LS19020115	Field Staff																	
				LS19020215	Field Office																	
				LS19020315	Demolition																	
		.19.03			**Site Restoration**																	
			FY15		**Fiscal Year 2015**																	
				LS19030115	Field Staff																	
				LS19030215	Field Office																	
				LS19030315	Site Restoration																	
					S Small Canister Underwater Loading System					**729,045**	**53,005,665**		**18,474,897**		**12,871,188**		**1,466,876**		**13,923,736**	**99,742,362**	**17,650,392**	**117,392,754**

Sludge Treatment Project: Small Canister Underwater Loading System

Project name	Small Canister rev1 currents est July 28, 2009 5:50 PM
Labor rate table	Hanford FY09
Equipment rate table	COMM2009
Notes	Small Canister Loading System - IPS Engr % K West Basin Min Safe 2010 to 2014 2010 Conceptual Design - Scale Testing 2011 Preliminary Design - Full Scale Prototype 2012 Final Design - Integrated Sys. Testing 2013 Construction 2014 Retrieve sludge 2015 Off River
Report format	Sorted by 'WBS Lvl 1/WBS Lvl 2/WBS Lvl 3/Year/Sch Acty' 'Detail' summary Print sort level notes

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
S Small Canister Underwater Loading System																	
.01 Project Management																	
.01.01 Project Management																	
FY10 Fiscal Year 2010																	
LS01010110 Project Management																	
Civil Engineers		52.00 wk	34.600 ch/wk	92.33 /ch	1,799	166,120	-	-	-	-	-	-	-	-	166,120	18,648	184,768
Managers & Executives		52.00 wk	34.600 ch/wk	102.62 /ch	1,799	184,634	-	-	-	-	-	-	-	-	184,634	20,727	205,360
LS01010110 Project Management					3,598	350,754									350,754	39,375	390,129
FY10 Fiscal Year 2010					**3,598**	**350,754**									**350,754**	**39,375**	**390,129**
FY11 Fiscal Year 2011																	
LS01010111 Project Management																	
Civil Engineers		52.00 wk	34.600 ch/wk	92.33 /ch	1,799	166,120	-	-	-	-	-	-	-	-	166,120	22,037	188,157
Managers & Executives		52.00 wk	34.600 ch/wk	102.62 /ch	1,799	184,634	-	-	-	-	-	-	-	-	184,634	24,493	209,127
LS01010111 Project Management					3,598	350,754									350,754	46,530	397,284
FY11 Fiscal Year 2011					**3,598**	**350,754**									**350,754**	**46,530**	**397,284**
FY12 Fiscal Year 2012																	
LS01010112 Project Management																	
Civil Engineers		52.00 wk	34.600 ch/wk	92.33 /ch	1,799	166,120	-	-	-	-	-	-	-	-	166,120	25,492	191,613
Managers & Executives		52.00 wk	34.600 ch/wk	102.62 /ch	1,799	184,634	-	-	-	-	-	-	-	-	184,634	28,333	212,967
LS01010112 Project Management					3,598	350,754									350,754	53,826	404,580
FY12 Fiscal Year 2012					**3,598**	**350,754**									**350,754**	**53,826**	**404,580**
FY13 Fiscal Year 2013																	
LS01010113 Project Management																	
Civil Engineers		52.00 wk	34.600 ch/wk	92.33 /ch	1,799	166,120	-	-	-	-	-	-	-	-	166,120	29,019	195,139
Managers & Executives		52.00 wk	34.600 ch/wk	102.62 /ch	1,799	184,634	-	-	-	-	-	-	-	-	184,634	32,253	216,887
LS01010113 Project Management					3,598	350,754									350,754	61,272	412,026
FY13 Fiscal Year 2013					**3,598**	**350,754**									**350,754**	**61,272**	**412,026**
.01.01 Project Management					**14,394**	**1,403,016**									**1,403,016**	**201,003**	**1,604,019**
.01.02 Construction Management																	
FY12 Fiscal Year 2012																	
LS01010212 Construction Management																	
Other Crafts		25.00 wk	69.200 ch/wk	52.19 /ch	1,730	90,289	-	-	-	-	-	-	-	-	90,289	30,107	120,396
First Line Supervisors		25.00 wk	34.600 ch/wk	78.54 /ch	865	67,937	-	-	-	-	-	-	-	-	67,937	22,654	90,591
Project & Program Managers		25.00 wk	34.600 ch/wk	117.10 /ch	865	101,292	-	-	-	-	-	-	-	-	101,292	33,776	135,068
Planner/Scheduler/Estimators		12.00 wk	34.600 ch/wk	86.56 /ch	415	35,940	-	-	-	-	-	-	-	-	35,940	11,984	47,924
LS01010212 Construction Management					3,875	295,457									295,457	98,522	393,979
FY12 Fiscal Year 2012					**3,875**	**295,457**									**295,457**	**98,522**	**393,979**
FY13 Fiscal Year 2013																	
LS01010213 Construction Management																	
Other Crafts		52.00 wk	69.200 ch/wk	52.19 /ch	3,598	187,801	-	-	-	-	-	-	-	-	187,801	66,610	254,411
First Line Supervisors		52.00 wk	34.600 ch/wk	78.54 /ch	1,799	141,309	-	-	-	-	-	-	-	-	141,309	50,121	191,430
Project & Program Managers		52.00 wk	34.600 ch/wk	117.10 /ch	1,799	210,686	-	-	-	-	-	-	-	-	210,686	74,728	285,414
Planner/Scheduler/Estimators		25.00 wk	34.600 ch/wk	86.56 /ch	865	74,874	-	-	-	-	-	-	-	-	74,874	26,557	101,431
LS01010213 Construction Management					8,062	614,670									614,670	218,016	832,686
FY13 Fiscal Year 2013					**8,062**	**614,670**									**614,670**	**218,016**	**832,686**
.01.02 Construction Management					**11,937**	**910,127**									**910,127**	**316,538**	**1,226,666**
.01 Project Management					26,331	2,313,144									2,313,144	517,541	2,830,685
.02 Project Support																	
.02.01 Project/Facility Support																	
FY10 Fiscal Year 2010																	
LS02010110 Project/Facility Support																	
Electrical Engineers	0.2 FTE	25.00 wk	8.000 ch/wk	79.21 /ch	200	15,842	-	-	-	-	-	-	-	-	15,842	1,778	17,620
Environmental Engineers	0.1 FTE	25.00 wk	4.000 ch/wk	82.98 /ch	100	8,298	-	-	-	-	-	-	-	-	8,298	932	9,230
Mechanical Engineers	0.2 FTE	25.00 wk	8.000 ch/wk	85.74 /ch	200	17,148	-	-	-	-	-	-	-	-	17,148	1,925	19,073
Nuclear Engineers	0.1 FTE	25.00 wk	4.000 ch/wk	94.95 /ch	100	9,495	-	-	-	-	-	-	-	-	9,495	1,066	10,561
RAD Engineers	0.1 FTE	25.00 wk	4.000 ch/wk	68.98 /ch	100	6,898	-	-	-	-	-	-	-	-	6,898	774	7,672
First Line Supervisors	0.1 FTE	25.00 wk	4.000 ch/wk	78.54 /ch	100	7,854	-	-	-	-	-	-	-	-	7,854	882	8,736
Planner/Scheduler/Estimators	0.1 FTE	25.00 wk	4.000 ch/wk	86.56 /ch	100	8,656	-	-	-	-	-	-	-	-	8,656	972	9,628
LS02010110 Project/Facility Support					900	74,191									74,191	8,329	82,520
FY10 Fiscal Year 2010					**900**	**74,191**									**74,191**	**8,329**	**82,520**
FY11 Fiscal Year 2011																	
LS02010111 Project/Facility Support																	
Electrical Engineers	0.2 FTE	52.00 wk	8.000 ch/wk	79.21 /ch	416	32,951	-	-	-	-	-	-	-	-	32,951	4,371	37,323
Environmental Engineers	0.1 FTE	52.00 wk	4.000 ch/wk	82.98 /ch	208	17,260	-	-	-	-	-	-	-	-	17,260	2,290	19,549
Mechanical Engineers	0.2 FTE	52.00 wk	8.000 ch/wk	85.74 /ch	416	35,668	-	-	-	-	-	-	-	-	35,668	4,732	40,399
Nuclear Engineers	0.1 FTE	52.00 wk	4.000 ch/wk	94.95 /ch	208	19,750	-	-	-	-	-	-	-	-	19,750	2,620	22,370
RAD Engineers	0.1 FTE	52.00 wk	4.000 ch/wk	68.98 /ch	208	14,348	-	-	-	-	-	-	-	-	14,348	1,903	16,251
First Line Supervisors	0.1 FTE	52.00 wk	4.000 ch/wk	78.54 /ch	208	16,336	-	-	-	-	-	-	-	-	16,336	2,167	18,503
Planner/Scheduler/Estimators	0.1 FTE	52.00 wk	4.000 ch/wk	86.56 /ch	208	18,004	-	-	-	-	-	-	-	-	18,004	2,388	20,393
LS02010111 Project/Facility Support					1,872	154,317									154,317	20,471	174,789
FY11 Fiscal Year 2011					**1,872**	**154,317**									**154,317**	**20,471**	**174,789**
FY12 Fiscal Year 2012																	
LS02010112 Project/Facility Support																	
Electrical Engineers	0.2 FTE	52.00 wk	8.000 ch/wk	79.21 /ch	416	32,951	-	-	-	-	-	-	-	-	32,951	5,057	38,008
Environmental Engineers	0.1 FTE	52.00 wk	4.000 ch/wk	82.98 /ch	208	17,260	-	-	-	-	-	-	-	-	17,260	2,649	19,908
Mechanical Engineers	0.2 FTE	52.00 wk	8.000 ch/wk	85.74 /ch	416	35,668	-	-	-	-	-	-	-	-	35,668	5,473	41,141
Nuclear Engineers	0.1 FTE	52.00 wk	4.000 ch/wk	94.95 /ch	208	19,750	-	-	-	-	-	-	-	-	19,750	3,031	22,780
RAD Engineers	0.1 FTE	52.00 wk	4.000 ch/wk	68.98 /ch	208	14,348	-	-	-	-	-	-	-	-	14,348	2,202	16,550
First Line Supervisors	0.1 FTE	52.00 wk	4.000 ch/wk	78.54 /ch	208	16,336	-	-	-	-	-	-	-	-	16,336	2,507	18,843
Planner/Scheduler/Estimators	0.1 FTE	52.00 wk	4.000 ch/wk	86.56 /ch	208	18,004	-	-	-	-	-	-	-	-	18,004	2,763	20,767
LS02010112 Project/Facility Support					1,872	154,317									154,317	23,681	177,998
FY12 Fiscal Year 2012					**1,872**	**154,317**									**154,317**	**23,681**	**177,998**
FY13 Fiscal Year 2013																	

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS02010113 Project/Facility Support																	
Electrical Engineers	0.2 FTE	52.00 wk	8.000 ch/wk	79.21 /ch	416	32,951	-	-	-	-	-	-	-	-	32,951	5,756	38,708
Environmental Engineers	0.1 FTE	52.00 wk	4.000 ch/wk	82.98 /ch	208	17,260	-	-	-	-	-	-	-	-	17,260	3,015	20,275
Mechanical Engineers	0.2 FTE	52.00 wk	8.000 ch/wk	85.74 /ch	416	35,668	-	-	-	-	-	-	-	-	35,668	6,231	41,899
Nuclear Engineers	0.1 FTE	52.00 wk	4.000 ch/wk	94.95 /ch	208	19,750	-	-	-	-	-	-	-	-	19,750	3,450	23,200
RAD Engineers	0.1 FTE	52.00 wk	4.000 ch/wk	68.98 /ch	208	14,348	-	-	-	-	-	-	-	-	14,348	2,506	16,854
First Line Supervisors	0.1 FTE	52.00 wk	4.000 ch/wk	78.54 /ch	208	16,336	-	-	-	-	-	-	-	-	16,336	2,854	19,190
Planner/Scheduler/Estimators	0.1 FTE	52.00 wk	4.000 ch/wk	86.56 /ch	208	18,004	-	-	-	-	-	-	-	-	18,004	3,145	21,150
LS02010113 Project/Facility Support					1,872	154,317									154,317	26,957	181,275
FY13 Fiscal Year 2013					**1,872**	**154,317**									**154,317**	**26,957**	**181,275**
.02.01 Project/Facility Support					**6,516**	**537,143**									**537,143**	**79,438**	**616,581**
.02 Project Support					6,516	537,143									537,143	79,438	616,581
.03 Environmental Doc., Permitting, & Waste Acceptance																	
.03.01 Environmental Documentation																	
FY11 Fiscal Year 2011																	
LS03010111 CERCLA Documentation																	
Environmental Engineers	NEPA Values (in FFS)	8.66 wk	34.600 ch/wk	82.98 /ch	300	24,864	-	-	-	-	-	-	-	-	24,864	3,298	28,162
Environmental Engineers	ESD or ROD Amendment	6.50 wk	34.600 ch/wk	82.98 /ch	225	18,648	-	-	-	-	-	-	-	-	18,648	2,474	21,122
Environmental Engineers	Proposed Plan to Amend the ROD**	4.33 wk	34.600 ch/wk	82.98 /ch	150	12,432	-	-	-	-	-	-	-	-	12,432	1,649	14,081
Environmental Engineers	Fact Sheet (RD - Completion)	2.17 wk	40.000 ch/wk	82.98 /ch	87	7,186	-	-	-	-	-	-	-	-	7,186	953	8,139
Environmental Engineers	Fact Sheet (ESD or ROD Amendment)	2.17 wk	40.000 ch/wk	82.98 /ch	87	7,186	-	-	-	-	-	-	-	-	7,186	953	8,139
Environmental Engineers	RD for 200 Area Storage (90% design)	6.50 wk	34.600 ch/wk	82.98 /ch	225	18,648	-	-	-	-	-	-	-	-	18,648	2,474	21,122
Environmental Engineers	Rad Air NOC Evaluation (T Plant) ARAR (New)	3.25 wk	34.600 ch/wk	82.98 /ch	112	9,325	-	-	-	-	-	-	-	-	9,325	1,237	10,562
Environmental Engineers	DOE O 435.1 Compliance	8.66 wk	40.000 ch/wk	82.98 /ch	346	28,744	-	-	-	-	-	-	-	-	28,744	3,813	32,557
Environmental Engineers	Focused Feasibility Study	6.50 wk	34.600 ch/wk	82.98 /ch	225	18,648	-	-	-	-	-	-	-	-	18,648	2,474	21,122
Environmental Engineers	RD / RA Work Plan (interim storage only)	2.17 wk	40.000 ch/wk	82.98 /ch	87	7,186	-	-	-	-	-	-	-	-	7,186	953	8,139
Environmental Engineers	Significance Evaluation / RL Interface	4.33 wk	40.000 ch/wk	82.98 /ch	173	14,372	-	-	-	-	-	-	-	-	14,372	1,907	16,279
LS03010111 CERCLA Documentation					2,015	167,239									167,239	22,186	189,425
LS03010211 Review Support																	
Environmental Engineers	3FTEs/mo Hcz Analysis EMS	13.00 wk	40.000 ch/wk	82.98 /ch	520	43,150	-	-	-	-	-	-	-	-	43,150	5,724	48,874
LS03010211 Review Support					520	43,150									43,150	5,724	48,874
FY11 Fiscal Year 2011					**2,535**	**210,389**									**210,389**	**27,910**	**238,298**
FY12 Fiscal Year 2012																	
LS03010212 Review Support																	
Environmental Engineers	3FTEs/mo Design	13.00 wk	40.000 ch/wk	82.98 /ch	520	43,150	-	-	-	-	-	-	-	-	43,150	6,622	49,771
LS03010212 Review Support					520	43,150									43,150	6,622	49,771
FY12 Fiscal Year 2012					**520**	**43,150**									**43,150**	**6,622**	**49,771**
.03.01 Environmental Documentation					**3,055**	**253,538**									**253,538**	**34,531**	**288,070**
.03.03 Waste Acceptance																	
FY12 Fiscal Year 2012																	
LS03030112 Waste Acceptance																	
Environmental Engineers	2eng -Waste Acceptance Criteria (WAC)	22.50 wk	40.000 ch/wk	82.98 /ch	900	74,682	-	-	-	-	-	-	-	-	74,682	11,461	86,143
Environmental Engineers	2 eng -Waste Profile	22.50 wk	20.000 ch/wk	82.98 /ch	450	37,341	-	-	-	-	-	-	-	-	37,341	5,730	43,071
Managers & Executives		2.00 wk	40.000 ch/wk	102.62 /ch	80	8,210	-	-	-	-	-	-	-	-	8,210	1,260	9,469
Technical Writers & Editors		2.25 wk	40.000 ch/wk	66.18 /ch	90	5,956	-	-	-	-	-	-	-	-	5,956	914	6,870
LS03030112 Waste Acceptance					1,520	126,189									126,189	19,365	145,553
FY12 Fiscal Year 2012					**1,520**	**126,189**									**126,189**	**19,365**	**145,553**
.03.03 Waste Acceptance					**1,520**	**126,189**									**126,189**	**19,365**	**145,553**
.03 Environmental Doc., Permitting, & Waste Acceptance					4,575	379,727									379,727	53,896	433,623
.04 Nuclear Safety																	
.04.01 Nuclear Safety																	
FY10 Fiscal Year 2010																	
LS04010110 Hazard Analysis																	
Nuclear Engineers		19.00 wk	40.000 ch/wk	94.95 /ch	760	72,162	-	-	-	-	-	-	-	-	72,162	8,101	80,263
LS04010110 Hazard Analysis					760	72,162									72,162	8,101	80,263
LS04010210 Accident Analysis																	
Nuclear Engineers		18.00 wk	80.000 ch/wk	94.95 /ch	1,440	136,728	-	-	-	-	-	-	-	-	136,728	15,349	152,077
LS04010210 Accident Analysis					1,440	136,728									136,728	15,349	152,077
LS04010310 Thermal/Gas Analysis Update(HNF-10858, SNF-18135,HNF-12563)																	
Nuclear Engineers		13.00 wk	40.000 ch/wk	94.95 /ch	520	49,374	-	-	-	-	-	-	-	-	49,374	5,543	54,917
LS04010310 Thermal/Gas Analysis Update(HNF-10858, SNF-18135,HNF-12563)					520	49,374									49,374	5,543	54,917
LS04010410 GAP Analysis																	
Chemical Engineers- E010		8.00 wk	40.000 ch/wk	81.66 /ch	320	26,131	-	-	-	-	-	-	-	-	26,131	2,933	29,065
LS04010410 GAP Analysis					320	26,131									26,131	2,933	29,065
LS04010510 Control Definitions																	
Nuclear Engineers	2 ea	10.00 wk	80.000 ch/wk	94.95 /ch	800	75,960	-	-	-	-	-	-	-	-	75,960	8,527	84,487
LS04010510 Control Definitions					800	75,960									75,960	8,527	84,487
LS04010610 Conceptual Safety Design Report																	
Nuclear Engineers	6FTE mo	36.00 wk	40.000 ch/wk	94.95 /ch	1,440	136,728	-	-	-	-	-	-	-	-	136,728	15,349	152,077
LS04010610 Conceptual Safety Design Report					1,440	136,728									136,728	15,349	152,077
LS04010710 Criticality Safety Analysis																	
Nuclear Engineers		6.00 wk	80.000 ch/wk	94.95 /ch	480	45,576	-	-	-	-	-	-	-	-	45,576	5,116	50,692
LS04010710 Criticality Safety Analysis					480	45,576									45,576	5,116	50,692
LS04010910 Fire Hazard Analysis																	
Nuclear Engineers		6.00 wk	40.000 ch/wk	94.95 /ch	240	22,788	-	-	-	-	-	-	-	-	22,788	2,558	25,346
LS04010910 Fire Hazard Analysis					240	22,788									22,788	2,558	25,346
LS04011010 EPHA																	
Nuclear Engineers		39.00 wk	40.000 ch/wk	94.95 /ch	1,560	148,122	-	-	-	-	-	-	-	-	148,122	16,628	164,750
LS04011010 EPHA					1,560	148,122									148,122	16,628	164,750
FY10 Fiscal Year 2010					**7,560**	**713,569**									**713,569**	**80,103**	**793,673**
FY11 Fiscal Year 2011																	

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS04010111 Hazard Analysis																	
Nuclear Engineers		13.30 wk	40.000 ch/wk	94.95 /ch	532	50,513	-	-	-	-	-	-	-	-	50,513	6,701	57,214
LS04010111 Hazard Analysis					532	50,513									50,513	6,701	57,214
LS04010211 Accident Analysis																	
Nuclear Engineers		12.60 wk	80.000 ch/wk	94.95 /ch	1,008	95,710	-	-	-	-	-	-	-	-	95,710	12,697	108,406
LS04010211 Accident Analysis					1,008	95,710									95,710	12,697	108,406
LS04010311 Thermal/Gas Analysis Update(HNF-10858, SNF-18135,HNF-12563)																	
Nuclear Engineers		9.10 wk	40.000 ch/wk	94.95 /ch	364	34,562	-	-	-	-	-	-	-	-	34,562	4,585	39,147
LS04010311 Thermal/Gas Analysis Update(HNF-10858, SNF-18135,HNF-12563)					364	34,562									34,562	4,585	39,147
LS04010411 GAP Analysis																	
Chemical Engineers- E010		5.60 wk	40.000 ch/wk	81.66 /ch	224	18,292	-	-	-	-	-	-	-	-	18,292	2,427	20,718
LS04010411 GAP Analysis					224	18,292									18,292	2,427	20,718
LS04010511 Control Definitions																	
Nuclear Engineers	2 ea	7.00 wk	80.000 ch/wk	94.95 /ch	560	53,172	-	-	-	-	-	-	-	-	53,172	7,054	60,226
LS04010511 Control Definitions					560	53,172									53,172	7,054	60,226
LS04010611 Preliminary Safety Design Report																	
Nuclear Engineers	6FTE mo	25.20 wk	40.000 ch/wk	94.95 /ch	1,008	95,710	-	-	-	-	-	-	-	-	95,710	12,697	108,406
LS04010611 Preliminary Safety Design Report					1,008	95,710									95,710	12,697	108,406
LS04010711 Criticality Safety Analysis																	
Nuclear Engineers		4.20 wk	80.000 ch/wk	94.95 /ch	336	31,903	-	-	-	-	-	-	-	-	31,903	4,232	36,135
LS04010711 Criticality Safety Analysis					336	31,903									31,903	4,232	36,135
LS04010911 Fire Hazard Analysis																	
Nuclear Engineers		4.20 wk	40.000 ch/wk	94.95 /ch	168	15,952	-	-	-	-	-	-	-	-	15,952	2,116	18,068
LS04010911 Fire Hazard Analysis					168	15,952									15,952	2,116	18,068
LS04011011 EPHA																	
Nuclear Engineers		27.30 wk	40.000 ch/wk	94.95 /ch	1,092	103,685	-	-	-	-	-	-	-	-	103,685	13,755	117,440
LS04011011 EPHA					1,092	103,685									103,685	13,755	117,440
FY11 Fiscal Year 2011					**5,292**	**499,498**									**499,498**	**66,262**	**565,761**
FY12 Fiscal Year 2012																	
LS04010112 Hazard Analysis																	
Nuclear Engineers		7.60 wk	40.000 ch/wk	94.95 /ch	304	28,865	-	-	-	-	-	-	-	-	28,865	4,430	33,294
LS04010112 Hazard Analysis					304	28,865									28,865	4,430	33,294
LS04010212 Accident Analysis																	
Nuclear Engineers		7.20 wk	80.000 ch/wk	94.95 /ch	576	54,691	-	-	-	-	-	-	-	-	54,691	8,393	63,084
LS04010212 Accident Analysis					576	54,691									54,691	8,393	63,084
LS04010312 Thermal/Gas Analysis Update(HNF-10858, SNF-18135,HNF-12563)																	
Nuclear Engineers		5.20 wk	40.000 ch/wk	94.95 /ch	208	19,750	-	-	-	-	-	-	-	-	19,750	3,031	22,780
LS04010312 Thermal/Gas Analysis Update(HNF-10858, SNF-18135,HNF-12563)					208	19,750									19,750	3,031	22,780
LS04010412 GAP Analysis																	
Chemical Engineers- E010		3.20 wk	40.000 ch/wk	81.66 /ch	128	10,452	-	-	-	-	-	-	-	-	10,452	1,604	12,056
LS04010412 GAP Analysis					128	10,452									10,452	1,604	12,056
LS04010512 Control Definitions																	
Nuclear Engineers	2 ea	4.00 wk	80.000 ch/wk	94.95 /ch	320	30,384	-	-	-	-	-	-	-	-	30,384	4,663	35,047
LS04010512 Control Definitions					320	30,384									30,384	4,663	35,047
LS04010612 Preliminary Safety Design Report																	
Nuclear Engineers	6FTE mo	14.40 wk	40.000 ch/wk	94.95 /ch	576	54,691	-	-	-	-	-	-	-	-	54,691	8,393	63,084
LS04010612 Preliminary Safety Design Report					576	54,691									54,691	8,393	63,084
LS04010712 Criticality Safety Analysis																	
Nuclear Engineers		2.40 wk	80.000 ch/wk	94.95 /ch	192	18,230	-	-	-	-	-	-	-	-	18,230	2,798	21,028
LS04010712 Criticality Safety Analysis					192	18,230									18,230	2,798	21,028
LS04010912 Fire Hazard Analysis																	
Nuclear Engineers		2.40 wk	40.000 ch/wk	94.95 /ch	96	9,115	-	-	-	-	-	-	-	-	9,115	1,399	10,514
LS04010912 Fire Hazard Analysis					96	9,115									9,115	1,399	10,514
LS04011012 EPHA																	
Nuclear Engineers		15.60 wk	40.000 ch/wk	94.95 /ch	624	59,249	-	-	-	-	-	-	-	-	59,249	9,092	68,341
LS04011012 EPHA					624	59,249									59,249	9,092	68,341
FY12 Fiscal Year 2012					**3,024**	**285,428**									**285,428**	**43,801**	**329,229**
FY13 Fiscal Year 2013																	
LS04010113 Hazard Analysis																	
Nuclear Engineers		5.70 wk	40.000 ch/wk	94.95 /ch	228	21,649	-	-	-	-	-	-	-	-	21,649	3,782	25,430
LS04010113 Hazard Analysis					228	21,649									21,649	3,782	25,430
LS04010213 Accident Analysis																	
Nuclear Engineers		5.40 wk	80.000 ch/wk	94.95 /ch	432	41,018	-	-	-	-	-	-	-	-	41,018	7,165	48,184
LS04010213 Accident Analysis					432	41,018									41,018	7,165	48,184
LS04010313 Thermal/Gas Analysis Update(HNF-10858, SNF-18135,HNF-12563)																	
Nuclear Engineers		3.90 wk	40.000 ch/wk	94.95 /ch	156	14,812	-	-	-	-	-	-	-	-	14,812	2,588	17,400
LS04010313 Thermal/Gas Analysis Update(HNF-10858, SNF-18135,HNF-12563)					156	14,812									14,812	2,588	17,400
LS04010413 GAP Analysis																	
Chemical Engineers- E010		2.40 wk	40.000 ch/wk	81.66 /ch	96	7,839	-	-	-	-	-	-	-	-	7,839	1,369	9,209
LS04010413 GAP Analysis					96	7,839									7,839	1,369	9,209
LS04010513 Control Definitions																	
Nuclear Engineers	2 ea	3.00 wk	80.000 ch/wk	94.95 /ch	240	22,788	-	-	-	-	-	-	-	-	22,788	3,981	26,769
LS04010513 Control Definitions					240	22,788									22,788	3,981	26,769
LS04010613 Conceptual Safety Design Report																	
Nuclear Engineers	6FTE mo	10.80 wk	40.000 ch/wk	94.95 /ch	432	41,018	-	-	-	-	-	-	-	-	41,018	7,165	48,184
LS04010613 Conceptual Safety Design Report					432	41,018									41,018	7,165	48,184
LS04010713 Criticality Safety Analysis																	
Nuclear Engineers		1.80 wk	80.000 ch/wk	94.95 /ch	144	13,673	-	-	-	-	-	-	-	-	13,673	2,388	16,061

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS04010713 Criticality Safety Analysis					144	13,673									13,673	2,388	16,061
LS04010913 Fire Hazard Analysis																	
Nuclear Engineers		1.80 wk	40.000 ch/wk	94.95 /ch	72	6,836	-	-	-	-	-	-	-	-	6,836	1,194	8,031
LS04010913 Fire Hazard Analysis					72	6,836									6,836	1,194	8,031
LS04011013 EPHA																	
Nuclear Engineers		11.70 wk	40.000 ch/wk	94.95 /ch	468	44,437	-	-	-	-	-	-	-	-	44,437	7,763	52,199
LS04011013 EPHA					468	44,437									44,437	7,763	52,199
FY13 Fiscal Year 2013					**2,268**	**214,071**									**214,071**	**37,395**	**251,466**
.04.01 Nuclear Safety					**18,144**	**1,712,566**									**1,712,566**	**227,562**	**1,940,128**
.04 Nuclear Safety					18,144	1,712,566									1,712,566	227,562	1,940,128
.05 Radiological Control																	
.05.01 Radiological Control																	
FY10 Fiscal Year 2010																	
LS05050110 Radiological Control																	
Nuclear Engineers	.1FTE	52.00 wk	4.000 ch/wk	94.95 /ch	208	19,750	-	-	-	-	-	-	-	-	19,750	2,217	21,967
LS05050110 Radiological Control					208	19,750									19,750	2,217	21,967
FY10 Fiscal Year 2010					**208**	**19,750**									**19,750**	**2,217**	**21,967**
FY11 Fiscal Year 2011																	
LS05050111 Radiological Control																	
Nuclear Engineers	.1FTE	52.00 wk	4.000 ch/wk	94.95 /ch	208	19,750	-	-	-	-	-	-	-	-	19,750	2,620	22,370
LS05050111 Radiological Control					208	19,750									19,750	2,620	22,370
FY11 Fiscal Year 2011					**208**	**19,750**									**19,750**	**2,620**	**22,370**
FY12 Fiscal Year 2012																	
LS05050112 Radiological Control																	
Nuclear Engineers	.1FTE	52.00 wk	4.000 ch/wk	94.95 /ch	208	19,750	-	-	-	-	-	-	-	-	19,750	3,031	22,780
LS05050112 Radiological Control					208	19,750									19,750	3,031	22,780
FY12 Fiscal Year 2012					**208**	**19,750**									**19,750**	**3,031**	**22,780**
FY13 Fiscal Year 2013																	
LS05050113 Radiological Control																	
Nuclear Engineers	.1FTE	52.00 wk	4.000 ch/wk	94.95 /ch	208	19,750	-	-	-	-	-	-	-	-	19,750	3,450	23,200
LS05050113 Radiological Control					208	19,750									19,750	3,450	23,200
FY13 Fiscal Year 2013					**208**	**19,750**									**19,750**	**3,450**	**23,200**
.05.01 Radiological Control					**832**	**78,998**									**78,998**	**11,318**	**90,316**
.05 Radiological Control					832	78,998									78,998	11,318	90,316
.06 Industrial Safety																	
.06.01 Industrial Safety																	
FY10 Fiscal Year 2010																	
LS06060110 Industrial Safety																	
Safety Engineer	0.1 FTE	52.00 wk	4.000 ch/wk	71.00 /ch	208	14,768	-	-	-	-	-	-	-	-	14,768	1,658	16,426
LS06060110 Industrial Safety					208	14,768									14,768	1,658	16,426
FY10 Fiscal Year 2010					**208**	**14,768**									**14,768**	**1,658**	**16,426**
FY11 Fiscal Year 2011																	
LS06060111 Industrial Safety																	
Safety Engineer	0.1 FTE	52.00 wk	4.000 ch/wk	71.00 /ch	208	14,768	-	-	-	-	-	-	-	-	14,768	1,959	16,727
LS06060111 Industrial Safety					208	14,768									14,768	1,959	16,727
FY11 Fiscal Year 2011					**208**	**14,768**									**14,768**	**1,959**	**16,727**
FY12 Fiscal Year 2012																	
LS06060112 Industrial Safety																	
Safety Engineer	0.1 FTE	52.00 wk	4.000 ch/wk	71.00 /ch	208	14,768	-	-	-	-	-	-	-	-	14,768	2,266	17,034
LS06060112 Industrial Safety					208	14,768									14,768	2,266	17,034
FY12 Fiscal Year 2012					**208**	**14,768**									**14,768**	**2,266**	**17,034**
FY13 Fiscal Year 2013																	
LS06060113 Industrial Safety																	
Safety Engineer	0.1 FTE	52.00 wk	4.000 ch/wk	71.00 /ch	208	14,768	-	-	-	-	-	-	-	-	14,768	2,580	17,348
LS06060113 Industrial Safety					208	14,768									14,768	2,580	17,348
FY13 Fiscal Year 2013					**208**	**14,768**									**14,768**	**2,580**	**17,348**
.06.01 Industrial Safety					**832**	**59,072**									**59,072**	**8,463**	**67,535**
.06 Industrial Safety					832	59,072									59,072	8,463	67,535
.07 Quality Assurance																	
.07.01 Quality Assurance																	
FY10 Fiscal Year 2010																	
LS07070110 Quality Assurance																	
Quality Control Engineers	0.2 FTE	52.00 wk	8.000 ch/wk	75.25 /ch	416	31,304	-	-	-	-	-	-	-	-	31,304	3,514	34,818
LS07070110 Quality Assurance					416	31,304									31,304	3,514	34,818
FY10 Fiscal Year 2010					**416**	**31,304**									**31,304**	**3,514**	**34,818**
FY11 Fiscal Year 2011																	
LS07070111 Quality Assurance																	
Quality Control Engineers	0.2 FTE	52.00 wk	8.000 ch/wk	75.25 /ch	416	31,304	-	-	-	-	-	-	-	-	31,304	4,153	35,457
LS07070111 Quality Assurance					416	31,304									31,304	4,153	35,457
FY11 Fiscal Year 2011					**416**	**31,304**									**31,304**	**4,153**	**35,457**
FY12 Fiscal Year 2012																	
LS07070112 Quality Assurance																	
Quality Control Engineers	0.2 FTE	52.00 wk	8.000 ch/wk	75.25 /ch	416	31,304	-	-	-	-	-	-	-	-	31,304	4,804	36,108
LS07070112 Quality Assurance					416	31,304									31,304	4,804	36,108
FY12 Fiscal Year 2012					**416**	**31,304**									**31,304**	**4,804**	**36,108**
FY13 Fiscal Year 2013																	
LS07070113 Quality Assurance																	
Quality Control Engineers	0.2 FTE	52.00 wk	8.000 ch/wk	75.25 /ch	416	31,304	-	-	-	-	-	-	-	-	31,304	5,468	36,772
LS07070113 Quality Assurance					416	31,304									31,304	5,468	36,772
FY13 Fiscal Year 2013					**416**	**31,304**									**31,304**	**5,468**	**36,772**

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
.07.01 Quality Assurance					**1,664**	**125,216**									**125,216**	**17,939**	**143,155**
.07 Quality Assurance					1,664	125,216									125,216	17,939	143,155
.08 Safeguards & Security																	
.08.01 Safeguards & Security																	
FY10 Fiscal Year 2010																	
LS08080110 Design Review Of Conceptual Design																	
Administrative Assistants		8.00 wk	40.000 ch/wk	47.45 /ch	320	15,184	-	-	-	-	-	-	-	-	15,184	1,705	16,889
Safeguard & Security		8.00 wk	40.000 ch/wk	65.54 /ch	320	20,973	-	-	-	-	-	-	-	-	20,973	2,354	23,327
LS08080110 Design Review Of Conceptual Design					640	36,157									36,157	4,059	40,216
FY10 Fiscal Year 2010					**640**	**36,157**									**36,157**	**4,059**	**40,216**
FY11 Fiscal Year 2011																	
LS08080111 Vulnerability Assessment																	
Administrative Assistants		8.00 wk	40.000 ch/wk	47.45 /ch	320	15,184	-	-	-	-	-	-	-	-	15,184	2,014	17,198
Safeguard & Security		8.00 wk	40.000 ch/wk	65.54 /ch	320	20,973	-	-	-	-	-	-	-	-	20,973	2,782	23,755
LS08080111 Vulnerability Assessment					640	36,157									36,157	4,796	40,953
FY11 Fiscal Year 2011					**640**	**36,157**									**36,157**	**4,796**	**40,953**
.08.01 Safeguards & Security					**1,280**	**72,314**									**72,314**	**8,855**	**81,169**
.08 Safeguards & Security					1,280	72,314									72,314	8,855	81,169
.09 Technology Development																	
.09.01 Technology Development Testing																	
FY10 Fiscal Year 2010																	
LS09090110 Componet/Scale Testing TRL 3																	
Electrical Engineers		52.00 wk	40.000 ch/wk	79.21 /ch	2,080	164,757	-	-	-	-	-	-	-	-	164,757	18,495	183,252
Mechanical Engineers		52.00 wk	40.000 ch/wk	85.74 /ch	2,080	178,339	-	-	-	-	-	-	-	-	178,339	20,020	198,359
Nuclear Engineers		52.00 wk	40.000 ch/wk	94.95 /ch	2,080	197,496	-	-	-	-	-	-	-	-	197,496	22,170	219,666
Other Engineers		52.00 wk	40.000 ch/wk	106.23 /ch	2,080	220,958	-	-	-	-	-	-	-	-	220,958	24,804	245,763
Component / Scale Testing Materials		1.00 ls		-		-	-	-	-	-	100,000.00 /ls	100,000	-	-	100,000	19,526	119,526
LS09090110 Componet/Scale Testing TRL 3					8,320	761,550						100,000			861,550	105,015	966,566
FY10 Fiscal Year 2010					**8,320**	**761,550**						**100,000**			**861,550**	**105,015**	**966,566**
FY11 Fiscal Year 2011																	
LS09090111 Engineering Scale TRL 5																	
Electrical Engineers		52.00 wk	40.000 ch/wk	79.21 /ch	2,080	164,757	-	-	-	-	-	-	-	-	164,757	21,856	186,613
Mechanical Engineers		52.00 wk	40.000 ch/wk	85.74 /ch	2,080	178,339	-	-	-	-	-	-	-	-	178,339	23,658	201,997
Nuclear Engineers		52.00 wk	40.000 ch/wk	94.95 /ch	2,080	197,496	-	-	-	-	-	-	-	-	197,496	26,199	223,695
Other Engineers		52.00 wk	40.000 ch/wk	106.23 /ch	2,080	220,958	-	-	-	-	-	-	-	-	220,958	29,312	250,270
Full Scale Prototype Construction		1.00 ls		-		-	-	-	-	-	250,000.00 /ls	250,000	-	-	250,000	53,914	303,914
LS09090111 Engineering Scale TRL 5					8,320	761,550						250,000			1,011,550	154,940	1,166,490
FY11 Fiscal Year 2011					**8,320**	**761,550**						**250,000**			**1,011,550**	**154,940**	**1,166,490**
FY12 Fiscal Year 2012																	
LS09090112 Full Scale TRL 7																	
Electrical Engineers		52.00 wk	40.000 ch/wk	79.21 /ch	2,080	164,757	-	-	-	-	-	-	-	-	164,757	25,283	190,040
Mechanical Engineers		52.00 wk	40.000 ch/wk	85.74 /ch	2,080	178,339	-	-	-	-	-	-	-	-	178,339	27,367	205,707
Nuclear Engineers		52.00 wk	40.000 ch/wk	94.95 /ch	2,080	197,496	-	-	-	-	-	-	-	-	197,496	30,307	227,803
Other Engineers		52.00 wk	40.000 ch/wk	106.23 /ch	2,080	220,958	-	-	-	-	-	-	-	-	220,958	33,908	254,866
Full Scale Integrated System Testing		1.00 ls		-		-	-	-	-	-	100,000.00 /ls	100,000	-	-	100,000	23,646	123,646
LS09090112 Full Scale TRL 7					8,320	761,550						100,000			861,550	140,511	1,002,062
FY12 Fiscal Year 2012					**8,320**	**761,550**						**100,000**			**861,550**	**140,511**	**1,002,062**
.09.01 Technology Development Testing					**24,960**	**2,284,651**						**450,000**			**2,734,651**	**400,466**	**3,135,117**
.09.02 Technology Development Assessments																	
FY10 Fiscal Year 2010																	
LS09090210 Componet/Scale Testing TRL 3																	
Electrical Engineers		52.00 wk	40.000 ch/wk	79.21 /ch	2,080	164,757	-	-	-	-	-	-	-	-	164,757	18,495	183,252
Mechanical Engineers		52.00 wk	40.000 ch/wk	85.74 /ch	2,080	178,339	-	-	-	-	-	-	-	-	178,339	20,020	198,359
Nuclear Engineers		52.00 wk	40.000 ch/wk	94.95 /ch	2,080	197,496	-	-	-	-	-	-	-	-	197,496	22,170	219,666
Other Engineers		52.00 wk	40.000 ch/wk	106.23 /ch	2,080	220,958	-	-	-	-	-	-	-	-	220,958	24,804	245,763
Component / Scale Testing Materials		1.00 ls		-		-	-	-	-	-	100,000.00 /ls	100,000	-	-	100,000	19,526	119,526
LS09090210 Componet/Scale Testing TRL 3					8,320	761,550						100,000			861,550	105,015	966,566
FY10 Fiscal Year 2010					**8,320**	**761,550**						**100,000**			**861,550**	**105,015**	**966,566**
FY11 Fiscal Year 2011																	
LS09090211 Engineering Scale TRL 5																	
Electrical Engineers		52.00 wk	40.000 ch/wk	79.21 /ch	2,080	164,757	-	-	-	-	-	-	-	-	164,757	21,856	186,613
Mechanical Engineers		52.00 wk	40.000 ch/wk	85.74 /ch	2,080	178,339	-	-	-	-	-	-	-	-	178,339	23,658	201,997
Nuclear Engineers		52.00 wk	40.000 ch/wk	94.95 /ch	2,080	197,496	-	-	-	-	-	-	-	-	197,496	26,199	223,695
Other Engineers		52.00 wk	40.000 ch/wk	106.23 /ch	2,080	220,958	-	-	-	-	-	-	-	-	220,958	29,312	250,270
Full Scale Prototype Construction		1.00 ls		-		-	-	-	-	-	250,000.00 /ls	250,000	-	-	250,000	53,914	303,914
LS09090211 Engineering Scale TRL 5					8,320	761,550						250,000			1,011,550	154,940	1,166,490
FY11 Fiscal Year 2011					**8,320**	**761,550**						**250,000**			**1,011,550**	**154,940**	**1,166,490**
FY12 Fiscal Year 2012																	
LS09090212 Full Scale TRL 7																	
Electrical Engineers		52.00 wk	40.000 ch/wk	79.21 /ch	2,080	164,757	-	-	-	-	-	-	-	-	164,757	25,283	190,040
Mechanical Engineers		52.00 wk	40.000 ch/wk	85.74 /ch	2,080	178,339	-	-	-	-	-	-	-	-	178,339	27,367	205,707
Nuclear Engineers		52.00 wk	40.000 ch/wk	94.95 /ch	2,080	197,496	-	-	-	-	-	-	-	-	197,496	30,307	227,803
Other Engineers		52.00 wk	40.000 ch/wk	106.23 /ch	2,080	220,958	-	-	-	-	-	-	-	-	220,958	33,908	254,866
Full Scale Integrated System Testing		1.00 ls		-		-	-	-	-	-	100,000.00 /ls	100,000	-	-	100,000	23,646	123,646
LS09090212 Full Scale TRL 7					8,320	761,550						100,000			861,550	140,511	1,002,062
FY12 Fiscal Year 2012					**8,320**	**761,550**						**100,000**			**861,550**	**140,511**	**1,002,062**
.09.02 Technology Development Assessments					**24,960**	**2,284,651**						**450,000**			**2,734,651**	**400,466**	**3,135,117**
.09.03 Technology Maturation Plan																	
FY10 Fiscal Year 2010																	
LS09090310 Componet/Scale Testing TRL 3																	
Electrical Engineers		52.00 wk	40.000 ch/wk	79.21 /ch	2,080	164,757	-	-	-	-	-	-	-	-	164,757	18,495	183,252
Mechanical Engineers		52.00 wk	40.000 ch/wk	85.74 /ch	2,080	178,339	-	-	-	-	-	-	-	-	178,339	20,020	198,359
Nuclear Engineers		52.00 wk	40.000 ch/wk	94.95 /ch	2,080	197,496	-	-	-	-	-	-	-	-	197,496	22,170	219,666

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS09090310 Componet/Scale Testing TRL 3																	
Other Engineers		52.00 wk	40.000 ch/wk	106.23 /ch	2,080	220,958	-	-	-	-	-	-	-	-	220,958	24,804	245,763
Component / Scale Testing Materials		1.00 ls		-		-	-	-	-	-	100,000.00 /ls	100,000	-	-	100,000	19,526	119,526
LS09090310 Componet/Scale Testing TRL 3					8,320	761,550						100,000			861,550	105,015	966,565
FY10 Fiscal Year 2010					**8,320**	**761,550**						**100,000**			**861,550**	**105,015**	**966,566**
FY11 Fiscal Year 2011																	
LS09090311 Engineering Scale TRL 5																	
Electrical Engineers		52.00 wk	40.000 ch/wk	79.21 /ch	2,080	164,757	-	-	-	-	-	-	-	-	164,757	21,856	186,613
Mechanical Engineers		52.00 wk	40.000 ch/wk	85.74 /ch	2,080	178,339	-	-	-	-	-	-	-	-	178,339	23,658	201,997
Nuclear Engineers		52.00 wk	40.000 ch/wk	94.95 /ch	2,080	197,496	-	-	-	-	-	-	-	-	197,496	26,199	223,695
Other Engineers		52.00 wk	40.000 ch/wk	106.23 /ch	2,080	220,958	-	-	-	-	-	-	-	-	220,958	29,312	250,270
Full Scale Prototype Construction		1.00 ls		-		-	-	-	-	-	250,000.00 /ls	250,000	-	-	250,000	53,914	303,914
LS09090311 Engineering Scale TRL 5					8,320	761,550						250,000			1,011,550	154,940	1,166,490
FY11 Fiscal Year 2011					**8,320**	**761,550**						**250,000**			**1,011,550**	**154,940**	**1,166,490**
FY12 Fiscal Year 2012																	
LS09090312 Full Scale TRL 7																	
Electrical Engineers		52.00 wk	40.000 ch/wk	79.21 /ch	2,080	164,757	-	-	-	-	-	-	-	-	164,757	25,283	190,040
Mechanical Engineers		52.00 wk	40.000 ch/wk	85.74 /ch	2,080	178,339	-	-	-	-	-	-	-	-	178,339	27,367	205,707
Nuclear Engineers		52.00 wk	40.000 ch/wk	94.95 /ch	2,080	197,496	-	-	-	-	-	-	-	-	197,496	30,307	227,803
Other Engineers		52.00 wk	40.000 ch/wk	106.23 /ch	2,080	220,958	-	-	-	-	-	-	-	-	220,958	33,908	254,866
Full Scale Integrated System Testing		1.00 ls		-		-	-	-	-	-	100,000.00 /ls	100,000	-	-	100,000	23,646	123,646
LS09090312 Full Scale TRL 7					8,320	761,550						100,000			861,550	140,511	1,002,062
FY12 Fiscal Year 2012					**8,320**	**761,550**						**100,000**			**861,550**	**140,511**	**1,002,062**
.09.03 Technology Maturation Plan					**24,960**	**2,284,651**						**450,000**			**2,734,651**	**400,466**	**3,135,117**
.09 Technology Development					74,880	6,853,954						1,350,000			8,203,954	1,201,399	9,405,352
.10 Conceptual Design																	
.10.01 Conceptual Design																	
FY10 Fiscal Year 2010																	
LS10100110 Conceptual Design																	
Electrical Engineers		105.00 wk	40.000 ch/wk	79.21 /ch	4,200	332,682	-	-	-	-	-	-	-	-	332,682	37,346	370,028
Environmental Engineers		105.00 wk	40.000 ch/wk	82.98 /ch	4,200	348,516	-	-	-	-	-	-	-	-	348,516	39,123	387,639
Mechanical Engineers		105.00 wk	40.000 ch/wk	85.74 /ch	4,200	360,108	-	-	-	-	-	-	-	-	360,108	40,425	400,533
Nuclear Engineers		105.00 wk	40.000 ch/wk	94.95 /ch	4,200	398,790	-	-	-	-	-	-	-	-	398,790	44,767	443,557
LS10100110 Conceptual Design					16,800	1,440,096									1,440,096	161,661	1,601,757
FY10 Fiscal Year 2010					**16,800**	**1,440,096**									**1,440,096**	**161,661**	**1,601,757**
.10.01 Conceptual Design					**16,800**	**1,440,096**									**1,440,096**	**161,661**	**1,601,757**
.10 Conceptual Design					16,800	1,440,096									1,440,096	161,661	1,601,757
.11 Preliminary Design																	
.11.01 Preliminary Design																	
FY11 Fiscal Year 2011																	
LS11110111 Preliminary Design																	
Electrical Engineers		157.00 wk	40.000 ch/wk	79.21 /ch	6,280	497,439	-	-	-	-	-	-	-	-	497,439	65,989	563,428
Environmental Engineers		157.00 wk	40.000 ch/wk	82.98 /ch	6,280	521,114	-	-	-	-	-	-	-	-	521,114	69,130	590,244
Mechanical Engineers		157.00 wk	40.000 ch/wk	85.74 /ch	6,280	538,447	-	-	-	-	-	-	-	-	538,447	71,429	609,876
Nuclear Engineers		157.00 wk	40.000 ch/wk	94.95 /ch	6,280	596,286	-	-	-	-	-	-	-	-	596,286	79,102	675,388
LS11110111 Preliminary Design					25,120	2,153,286									2,153,286	285,649	2,438,936
FY11 Fiscal Year 2011					**25,120**	**2,153,286**									**2,153,286**	**285,649**	**2,438,936**
.11.01 Preliminary Design					**25,120**	**2,153,286**									**2,153,286**	**285,649**	**2,438,936**
.11 Preliminary Design					25,120	2,153,286									2,153,286	285,649	2,438,936
.12 Final Design																	
.12.01 Final Design																	
FY12 Fiscal Year 2012																	
LS12120112 Final Design																	
Electrical Engineers		314.00 wk	40.000 ch/wk	79.21 /ch	12,560	994,878	-	-	-	-	-	-	-	-	994,878	152,671	1,147,549
Environmental Engineers		314.00 wk	40.000 ch/wk	82.98 /ch	12,560	1,042,229	-	-	-	-	-	-	-	-	1,042,229	159,938	1,202,166
Mechanical Engineers		314.00 wk	40.000 ch/wk	85.74 /ch	12,560	1,076,894	-	-	-	-	-	-	-	-	1,076,894	165,257	1,242,152
Nuclear Engineers		314.00 wk	40.000 ch/wk	94.95 /ch	12,560	1,192,572	-	-	-	-	-	-	-	-	1,192,572	183,009	1,375,581
LS12120112 Final Design					50,240	4,306,573									4,306,573	660,875	4,967,448
FY12 Fiscal Year 2012					**50,240**	**4,306,573**									**4,306,573**	**660,875**	**4,967,448**
.12.01 Final Design					**50,240**	**4,306,573**									**4,306,573**	**660,875**	**4,967,448**
.12 Final Design					50,240	4,306,573									4,306,573	660,875	4,967,448
.13 Engineering During Construction																	
.13.01 Engineering During Construction																	
FY13 Fiscal Year 2013																	
LS13130113 Engineering During Construction																	
Electrical Engineers		209.00 wk	40.000 ch/wk	79.21 /ch	8,360	662,196	-	-	-	-	-	-	-	-	662,196	115,677	777,873
Environmental Engineers		209.00 wk	40.000 ch/wk	82.98 /ch	8,360	693,713	-	-	-	-	-	-	-	-	693,713	121,183	814,896
Mechanical Engineers		209.00 wk	40.000 ch/wk	85.74 /ch	8,360	716,786	-	-	-	-	-	-	-	-	716,786	125,214	842,000
Nuclear Engineers		209.00 wk	40.000 ch/wk	94.95 /ch	8,360	793,782	-	-	-	-	-	-	-	-	793,782	138,664	932,446
LS13130113 Engineering During Construction					33,440	2,866,477									2,866,477	500,737	3,367,214
FY13 Fiscal Year 2013					**33,440**	**2,866,477**									**2,866,477**	**500,737**	**3,367,214**
.13.01 Engineering During Construction					**33,440**	**2,866,477**									**2,866,477**	**500,737**	**3,367,214**
.13 Engineering During Construction					33,440	2,866,477									2,866,477	500,737	3,367,214
.14 Procurement																	
.14.01 Procurement Support																	
FY12 Fiscal Year 2012																	
LS14140112 Procurement Support																	
Secretaries		52.00 wk	10.000 ch/wk	36.30 /ch	520	18,876	-	-	-	-	-	-	-	-	18,876	2,897	21,773
Buyers/Procurement/Contracting		52.00 wk	20.000 ch/wk	70.24 /ch	1,040	73,050	-	-	-	-	-	-	-	-	73,050	11,210	84,260
LS14140112 Procurement Support					1,560	91,926									91,926	14,107	106,032
FY12 Fiscal Year 2012					**1,560**	**91,926**									**91,926**	**14,107**	**106,032**
FY13 Fiscal Year 2013																	
LS14140113 Procurement Support																	

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS14140113 Procurement Support																	
Secretaries		20.00 wk	10.000 ch/wk	36.30 /ch	200	7,260	-	-	-	-	-	-	-	-	7,260	1,268	8,528
Buyers/Procurement/Contracting		20.00 wk	20.000 ch/wk	70.24 /ch	400	28,096	-	-	-	-	-	-	-	-	28,096	4,908	33,004
LS14140113 Procurement Support					600	35,356									35,356	6,176	41,532
FY13 Fiscal Year 2013					**600**	**35,356**									**35,356**	**6,176**	**41,532**
.14.01 Procurement Support					**2,160**	**127,282**									**127,282**	**20,283**	**147,565**
.14.02 Equipment Procurement																	
FY13 Fiscal Year 2013																	
LS14020113 Equipment Procurement																	
Purchase lowboy 3 axle, 50 ton		1.00 ea		-		-	-	-	-	-	-	-	-	-	40,000	10,308	50,308
FTS cask asemblies	Sludge Transfer in small container Phase 2 - Fabrication of 2 FTS Transfer Cask Assemblies Contract Value $1,272061 Escalated for 8 years (17.1659% - 2% per year)and divided by 2 for a individual cost of $745,210.85	2.00 ea		/ea			745,210.85 /ea	1,490,422	-	-	40,000.00 /ea	40,000	-	-	1,490,422	384,063	1,874,485
Vessel, ss, 1050gal -STSC	Sludge Transfer and Storage Container (STSC) Subcontract costs are certification costs	40.00 ea	4.748 ch/ea	143.94 /ch	380	27,337	50,354.85 /ea	2,014,194	5,000.00 /ea	200,000	-	-	-	-	2,241,531	558,745	2,800,277
XAGO Tool	Nuvision Engineering - 1 spare	2.00 ea		-		-	-	-	50,000.00 /ea	100,000	-	-	-	-	100,000	17,469	117,469
Centrifugal, pumps, 15 HP,	Under water pump & motor 15 hp	1.00 ea		/ea			30,000.00 /ea	30,000	-	-	/ea	-	-	-	30,000	7,731	37,731
LS14020113 Equipment Procurement					380	27,337		3,534,616		300,000		40,000			3,901,953	978,315	4,880,268
LS14031013 Purchase SA Robotics Equipment																	
Settling Tank and Support Frame		4.00 ea		/ea			/ea		15,721.24 /ea	62,885	-	-	-	-	62,885	10,985	73,870
Small Container Lift and Transfer		4.00 ea		/ea			/ea		33,791.19 /ea	135,165	-	-	-	-	135,165	23,612	158,776
Transfer System		4.00 ea		/ea			/ea		33,791.19 /ea	135,165	-	-	-	-	135,165	23,612	158,776
Small Containers		462.00 ea		-		-	/ea		15,153.00 /ea	7,000,686	-	-	-	-	7,000,686	1,222,931	8,223,617
Upper Control area		4.00 ea		/ea			/ea		9,527.45 /ea	38,110	-	-	-	-	38,110	6,657	44,767
Controls		4.00 ea		/ea			/ea		76,249.90 /ea	305,000	-	-	-	-	305,000	53,280	358,279
Facility Mods		4.00 ea		/ea			/ea		14,584.76 /ea	58,339	-	-	-	-	58,339	10,191	68,530
Shipping		4.00 ea		/ea			/ea		3,389.48 /ea	13,558	-	-	-	-	13,558	2,368	15,926
G&A / Material Handling		6,203,301.00 $		0.00 /$		0	0.00 /$	0	-	-	-	-	0.52 /$	3,194,700	3,194,700	558,074	3,752,774
Business & Occupation Tax		9,398,001.00 $		/$			0.00 /$	0	-	-	-	-	0.01 /$	46,990	46,990	8,209	55,199
LS14031013 Purchase SA Robotics Equipment										7,748,907				3,241,690	10,990,597	1,919,918	12,910,515
LS14031113 Tray & Canister Jig TPlant Crane																	
Mechanical Engineers		8.00 wk	40.000 ch/wk	85.74 /ch	320	27,437	-	-	-	-	-	-	-	-	27,437	4,793	32,230
Other Professionals	Designer-CAD	8.00 wk	40.000 ch/wk	89.60 /ch	320	28,672	-	-	-	-	-	-	-	-	28,672	5,009	33,681
Material Costs		1.00 ls		/ls			10,000.00 /ls	10,000	/ls	-	-	-	-	-	10,000	2,577	12,577
LS14031113 Tray & Canister Jig TPlant Crane	Enable T Plant Crane to move tray and canisters				640	56,109		10,000							66,109	12,378	78,487
LS14031213 Secondary spill containment tray																	
Structural Engineers		4.00 wk	40.000 ch/wk	92.33 /ch	160	14,773	-	-	-	-	-	-	-	-	14,773	2,581	17,353
Other Professionals	Designer-CAD	4.00 wk	40.000 ch/wk	89.60 /ch	160	14,336	-	-	-	-	-	-	-	-	14,336	2,504	16,840
Angle framing, structural steel, 3"x3"x3/8", field fabricated, incl cutting & welding		200.00 lf	0.731 ch/lf	171.46 /ch	439	25,067	6.50 /lf	1,300	-	-	16.78 /ch	2,452	-	-	28,820	5,346	34,166
Stainless Steel plate, 1/4" T, warehouse price, no shop fabrication	October 27, 2008 ENR - Atlanta $ 171.77 cwt 1/4" 72" x 240" 10.21 lb/sf 18' x 13' = 234 sf	2,390.00 lb		-		-	1.77 /sf	4,233	-	-	-	-	-	-	4,233	1,091	5,324
LS14031213 Secondary spill containment tray					759	54,176		5,533				2,452			62,162	11,522	73,684
FY13 Fiscal Year 2013					**1,778**	**137,622**		**3,550,149**		**8,048,907**		**42,452**		**3,241,690**	**15,020,821**	**2,922,134**	**17,942,954**
.14.02 Equipment Procurement					**1,778**	**137,622**		**3,550,149**		**8,048,907**		**42,452**		**3,241,690**	**15,020,821**	**2,922,134**	**17,942,954**
.14 Procurement					3,938	264,904		3,550,149		8,048,907		42,452		3,241,690	15,148,102	2,942,416	18,090,519
.15 Construction																	
.15.03 Bldg. Modifications																	
FY13 Fiscal Year 2013																	
LS15030213 Field Office & Supplies																	
Modesty Pant (green) Reuse	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 288 each per year.	320.00 ea		-		-	-	-	2.45 /ea	784	-	-	-	-	784	278	1,062
Modesty Shirt (green) Reuse	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 288 each per year.	320.00 ea		-		-	-	-	2.20 /ea	704	-	-	-	-	704	250	954
Tee Shirt Reuse	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 288 each per year.	320.00 ea		-		-	-	-	2.25 /ea	720	-	-	-	-	720	255	975
Underware Reuse	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 288 each per year.	320.00 ea		-		-	-	-	1.25 /ea	400	-	-	-	-	400	142	542
Socks - pair Reuse	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 288 each per year.	320.00 ea		-		-	-	-	0.50 /ea	160	-	-	-	-	160	57	217
Hard hat Reuse	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 288 each per year.	5.00 ea		-		-	-	-	6.50 /ea	33	-	-	-	-	33	12	44
Safety Shoes Reuse	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 288 each per year.	5.00 ea		-		-	-	-	47.80 /ea	239	-	-	-	-	239	85	324
Yellow coveralls - Disposable	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 138,240 each per year.	1,000.00 ea		-		-	-	-	25.00 /ea	25,000	-	-	-	-	25,000	8,867	33,867
Yellow Booties - Disposable	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 138,240 each per year.	1,000.00 ea		-		-	-	-	1.00 /ea	1,000	-	-	-	-	1,000	355	1,355
Rubber Overshoe - Disposable	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on	1,000.00 ea		-		-	-	-	9.00 /ea	9,000	-	-	-	-	9,000	3,192	12,192

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS15030213 Field Office & Supplies																	
Rubber Overshoe - Disposable	138,240 each per year.	1,000.00 ea		-		-	-	-	9.00 /ea	9,000	-	-	-	-	9,000	3,192	12,192
Skull cap - Disposable	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 138,240 each per year.	1,000.00 ea		-		-	-	-	2.00 /ea	2,000	-	-	-	-	2,000	709	2,709
Hood - Disposable	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 138,240 each per year.	1,000.00 ea		-		-	-	-	7.50 /ea	7,500	-	-	-	-	7,500	2,660	10,160
Cotton Liners- (gloves) Disposable	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 138,240 each per year.	1,000.00 ea		-		-	-	-	0.40 /ea	400	-	-	-	-	400	142	542
Rubber gloves - Disposable	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 276,480 each per year.	1,000.00 ea		-		-	-	-	9.00 /ea	9,000	-	-	-	-	9,000	3,192	12,192
Respirator/Filters	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 288 each per year.	2,000.00 ea		-		-	-	-	10.78 /ea	21,560	-	-	-	-	21,560	7,647	29,207
Laundry Reuse- Level C	Based on Radiological Contamanated Items UniTech Services Group Subcontract No 00500573 @ ICP	80.00 ea		-		-	-	-	7.73 /ea	618	-	-	-	-	618	219	838
LS15030213 Field Office & Supplies										79,118					79,118	28,062	107,180
LS15030313 Demolition & Bldg Seperation																	
Containment area, 2" x 4" @ 16", 3/4" plywood each side		600.00 sf	0.149 ch/sf	102.36 /ch	179	9,139	2.50 /sf	1,500	-	-	-	-	-	-	10,639	3,898	14,537
LS15030313 Demolition & Bldg Seperation					179	9,139		1,500							10,639	3,898	14,537
LS15030513 Electrical																	
Wire connector, screw type, #18 to #12	Glycol pump	6.00 ea	0.174 ch/ea	60.19 /ch	1	63	0.10 /ea	1	-	-	-	-	-	-	63	22	86
Wire connector, screw type, #18 to #12	Lighting	18.00 ea	0.174 ch/ea	60.19 /ch	3	188	0.10 /ea	2	-	-	-	-	-	-	190	68	257
Wire connector, screw type, insulated, #18 to #12	I & C power supply	6.00 ea	0.174 ch/ea	60.19 /ch	1	63	0.11 /ea	1	-	-	-	-	-	-	63	23	86
Wire connector, screw type, insulated, #18 to #12	EF-1	6.00 ea	0.174 ch/ea	60.19 /ch	1	63	0.11 /ea	1	-	-	-	-	-	-	63	23	86
Wire connector, screw type, insulated, #18 to #12	EF-2	6.00 ea	0.174 ch/ea	60.19 /ch	1	63	0.11 /ea	1	-	-	-	-	-	-	63	23	86
Wire connector, screw type, insulated, #16 to #10	Supply Fan	6.00 ea	0.181 ch/ea	60.19 /ch	1	65	0.14 /ea	1	-	-	-	-	-	-	66	24	90
Terminal lugs, solderless, #8 to #4	Wire, Conduit, Pull boxes & Terminations Decant pump	6.00 ea	1.389 ch/ea	60.19 /ch	8	502	0.87 /ea	5	-	-	-	-	-	-	507	180	687
Terminal lugs, solderless, #8 to #4	Pumps 11 FLA & 27 FLA	6.00 ea	1.389 ch/ea	60.19 /ch	8	502	0.87 /ea	5	-	-	-	-	-	-	507	180	687
Terminal lugs, solderless, #2 to #1	HP-1	6.00 ea	1.894 ch/ea	60.19 /ch	11	684	1.17 /ea	7	-	-	-	-	-	-	691	246	937
Terminal lugs, solderless, #2 to #1		32.00 ea	0.181 ch/ea	60.19 /ch	6	349	1.17 /ea	37	-	-	-	-	-	-	386	140	527
Terminal lugs, solderless, 3/0	Power feed to panel PP-105KW-12	6.00 ea	3.472 ch/ea	60.19 /ch	21	1,254	4.00 /ea	24	-	-	-	-	-	-	1,278	455	1,733
Portable cord, type SO, 600 volt, 4 conductor, #2, in tray or exposed	SCS #1	150.00 lf	0.149 ch/lf	120.38 /ch	45	2,687	9.20 /lf	1,380	-	-	-	-	-	-	4,067	1,557	5,624
Portable cord, type SO, 600 volt, 4 conductor, #2, in tray or exposed	SCS #2	150.00 lf	0.149 ch/lf	120.38 /ch	45	2,687	9.20 /lf	1,380	-	-	-	-	-	-	4,067	1,557	5,624
Portable cord, type SO, 600 volt, 4 conductor, #2, in tray or exposed	SCS #3	150.00 lf	0.149 ch/lf	120.38 /ch	45	2,687	9.20 /lf	1,380	-	-	-	-	-	-	4,067	1,557	5,624
Portable cord, type SO, 600 volt, 4 conductor, #2, in tray or exposed	SCS #4	150.00 lf	0.149 ch/lf	120.38 /ch	45	2,687	9.20 /lf	1,380	-	-	-	-	-	-	4,067	1,557	5,624
Wire, copper, solid, 600 volt, #12, type THWN-THHN, in raceway	I & C power supply	1.05 clf	3.788 ch/clf	60.19 /ch	4	239	15.90 /clf	17	-	-	-	-	-	-	256	92	348
Wire, copper, solid, 600 volt, #12, type THWN-THHN, in raceway	EF-1	1.35 clf	3.788 ch/clf	60.19 /ch	5	308	15.90 /clf	21	-	-	-	-	-	-	329	119	448
Wire, copper, solid, 600 volt, #12, type THWN-THHN, in raceway	Glycol pump	2.25 clf	3.788 ch/clf	60.19 /ch	9	513	15.90 /clf	36	-	-	-	-	-	-	549	198	746
Wire, copper, solid, 600 volt, #12, type THWN-THHN, in raceway	Lighting	18.45 clf	3.788 ch/clf	60.19 /ch	70	4,206	15.90 /clf	293	-	-	-	-	-	-	4,500	1,620	6,120
Wire, copper, solid, 600 volt, #10, type THWN-THHN, in raceway	Supply Fan	1.95 clf	4.167 ch/clf	60.19 /ch	8	489	25.00 /clf	49	-	-	-	-	-	-	538	195	733
Wire, copper, stranded, 600 volt, #12, type THWN-THHN, in raceway	EF-2	1.65 clf	3.788 ch/clf	60.19 /ch	6	376	16.25 /clf	27	-	-	-	-	-	-	403	145	548
Wire, copper, stranded, 600 volt, #6, type THWN-THHN, in raceway	Wire, Conduit, Pull boxes & Terminations Decant pump	1.20 clf	6.410 ch/clf	60.19 /ch	8	463	67.50 /clf	81	-	-	-	-	-	-	544	200	744
Wire, copper, stranded, 600 volt, #4, type THWN-THHN, in raceway	Pumps 11 FLA & 27 FLA	6.15 clf	3.931 ch/clf	120.38 /ch	48	2,910	106.00 /clf	652	-	-	-	-	-	-	3,562	1,318	4,880
Wire, copper, stranded, 600 volt, #2, type THWN-THHN, in raceway	HP-1	1.95 clf	4.630 ch/clf	120.38 /ch	18	1,087	168.00 /clf	328	-	-	-	-	-	-	1,414	529	1,943
Wire, copper, stranded, 600 volt, 3/0, type THWN-THHN, in raceway	Power feed to panel PP-105KW-12	3.15 clf	8.333 ch/clf	120.38 /ch	53	3,160	410.00 /clf	1,292	-	-	-	-	-	-	4,451	1,686	6,138
Rigid galvanized steel conduit, 3/4" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	Supply Fan	60.00 lf	0.521 ch/lf	60.19 /ch	31	1,881	3.23 /lf	194	-	-	-	-	-	-	2,075	752	2,827
Rigid galvanized steel conduit, 3/4" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	I & C power supply	30.00 lf	0.521 ch/lf	60.19 /ch	16	940	3.23 /lf	97	-	-	-	-	-	-	1,037	376	1,413
Rigid galvanized steel conduit, 3/4" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	EF-1	40.00 lf	0.521 ch/lf	60.19 /ch	21	1,254	3.23 /lf	129	-	-	-	-	-	-	1,383	501	1,884
Rigid galvanized steel conduit, 3/4" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	EF-2	50.00 lf	0.521 ch/lf	60.19 /ch	26	1,567	3.23 /lf	162	-	-	-	-	-	-	1,729	627	2,356
Rigid galvanized steel conduit, 3/4" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	Glycol pump	70.00 lf	0.521 ch/lf	60.19 /ch	36	2,194	3.23 /lf	226	-	-	-	-	-	-	2,421	877	3,298
Rigid galvanized steel conduit, 3/4" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	Lighting	200.00 lf	0.521 ch/lf	60.19 /ch	104	6,270	3.23 /lf	646	-	-	-	-	-	-	6,916	2,507	9,422
Rigid galvanized steel conduit, 1" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	Wire, Conduit, Pull boxes & Terminations Decant pump	35.00 lf	0.641 ch/lf	60.19 /ch	22	1,350	4.44 /lf	155	-	-	-	-	-	-	1,506	547	2,053
Rigid galvanized steel conduit, 1-1/4" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	HP-1	60.00 lf	0.694 ch/lf	60.19 /ch	42	2,508	6.15 /lf	369	-	-	-	-	-	-	2,877	1,051	3,928
Rigid galvanized steel conduit, 1-1/2" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	Pumps 11 FLA & 27 FLA	200.00 lf	0.758 ch/lf	60.19 /ch	152	9,119	7.15 /lf	1,430	-	-	-	-	-	-	10,549	3,860	14,410
Rigid galvanized steel conduit, 2" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	Power feed to panel PP-105KW-12	100.00 lf	0.926 ch/lf	60.19 /ch	93	5,573	9.25 /lf	925	-	-	-	-	-	-	6,498	2,382	8,880
Pull boxes, sheet metal, type SC, raintight & weatherproof, 6" L x 6" W x 6" D, NEMA 3R	Supply Fan	1.20 ea	4.167 ch/ea	60.19 /ch	5	301	21.50 /ea	26	-	-	-	-	-	-	327	118	445
Pull boxes, sheet metal, type SC, raintight & weatherproof, 6" L x 6" W x 6" D, NEMA 3R	I & C power supply	0.60 ea	4.167 ch/ea	60.19 /ch	3	150	21.50 /ea	13	-	-	-	-	-	-	163	59	222
Pull boxes, sheet metal, type SC, raintight & weatherproof, 6" L x 6" W x 6" D, NEMA 3R	EF-1	0.80 ea	4.167 ch/ea	60.19 /ch	3	201	21.50 /ea	17	-	-	-	-	-	-	218	79	297
Pull boxes, sheet metal, type SC, raintight & weatherproof, 6" L x 6" W x 6" D, NEMA 3R	EF-2	1.00 ea	4.167 ch/ea	60.19 /ch	4	251	21.50 /ea	22	-	-	-	-	-	-	272	98	371
Pull boxes, sheet metal, type SC, raintight & weatherproof, 6" L x 6" W x 6" D, NEMA 3R	Glycol pump	1.40 ea	4.167 ch/ea	60.19 /ch	6	351	21.50 /ea	30	-	-	-	-	-	-	381	138	519
Pull boxes, sheet metal, type SC, raintight & weatherproof, 6" L x 6" W x 6" D, NEMA 3R	Lighting	4.00 ea	4.167 ch/ea	60.19 /ch	17	1,003	21.50 /ea	86	-	-	-	-	-	-	1,089	393	1,483
Pull boxes, sheet metal, type SC, raintight & weatherproof, 8" L x 6" W x 6" D, NEMA 3R	HP-1	1.20 ea	5.208 ch/ea	60.19 /ch	6	376	27.00 /ea	32	-	-	-	-	-	-	409	148	556

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS15030513 Electrical																	
Pull boxes, sheet metal, type SC, raintight & weatherproof, 12" L x 12" W x 6" D, NEMA 3R	Wire, Conduit, Pull boxes & Terminations Decant pump	0.70 ea	8.333 ch/ea	60.19 /ch	6	351	51.00 /ea	36	-	-	-	-	-	-	387	140	527
Pull boxes, sheet metal, type SC, raintight & weatherproof, 12" L x 12" W x 6" D, NEMA 3R	Pumps 11 FLA & 27 FLA	4.00 ea	8.333 ch/ea	60.19 /ch	33	2,006	51.00 /ea	204	-	-	-	-	-	-	2,210	801	3,011
Pull boxes, sheet metal, type SC, raintight & weatherproof, 16" L x 16" W x 6" D, NEMA 3R	Power feed to panel PP-105KW-12	2.00 ea	9.259 ch/ea	60.19 /ch	19	1,115	101.00 /ea	202	-	-	-	-	-	-	1,317	484	1,800
Knockouts, metal boxes & enclosures, with hole saw, 3/4" pipe size, to 8' high	Supply Fan	2.40 ea	0.887 ch/ea	60.19 /ch	2	128	-	-	-	-	-	-	-	-	128	45	173
Knockouts, metal boxes & enclosures, with hole saw, 3/4" pipe size, to 8' high	I & C power supply	1.20 ea	0.887 ch/ea	60.19 /ch	1	64	-	-	-	-	-	-	-	-	64	23	87
Knockouts, metal boxes & enclosures, with hole saw, 3/4" pipe size, to 8' high	EF-1	1.60 ea	0.887 ch/ea	60.19 /ch	1	85	-	-	-	-	-	-	-	-	85	30	116
Knockouts, metal boxes & enclosures, with hole saw, 3/4" pipe size, to 8' high	EF-2	2.00 ea	0.887 ch/ea	60.19 /ch	2	107	-	-	-	-	-	-	-	-	107	38	145
Knockouts, metal boxes & enclosures, with hole saw, 3/4" pipe size, to 8' high	Glycol pump	2.80 ea	0.887 ch/ea	60.19 /ch	2	149	-	-	-	-	-	-	-	-	149	53	202
Knockouts, metal boxes & enclosures, with hole saw, 3/4" pipe size, to 8' high	Lighting	8.00 ea	0.887 ch/ea	60.19 /ch	7	427	-	-	-	-	-	-	-	-	427	151	578
Knockouts, metal boxes & enclosures, with hole saw, 1" pipe size, to 8' high	Wire, Conduit, Pull boxes & Terminations Decant pump	1.40 ea	1.042 ch/ea	60.19 /ch	1	88	-	-	-	-	-	-	-	-	88	31	119
Knockouts, metal boxes & enclosures, with hole saw, 1-1/4" pipe size, to 8' high	HP-1	2.40 ea	1.157 ch/ea	60.19 /ch	3	167	-	-	-	-	-	-	-	-	167	59	226
Knockouts, metal boxes & enclosures, with hole saw, 1-1/2" pipe size, to 8' high	Pumps 11 FLA & 27 FLA	8.00 ea	1.302 ch/ea	60.19 /ch	10	627	-	-	-	-	-	-	-	-	627	222	849
Knockouts, metal boxes & enclosures, with hand punch set, 2" pipe size, to 8' high	Power feed to panel PP-105KW-12	4.00 ea	2.083 ch/ea	60.19 /ch	8	502	-	-	-	-	-	-	-	-	502	178	679
Transformer, dry-type, single phase 240/480 V primary 120/240 V secondary, 3 kVA	Instrumentation and Control	1.00 ea	29.762 ch/ea	60.19 /ch	30	1,791	495.00 /ea	495	-	-	-	-	-	-	2,286	852	3,138
Switchboards, main lugs only, 3 pole, 3 wire, to 600 volt, 200 amp		1.00 ea	34.722 ch/ea	120.38 /ch	69	4,180	1,525.00 /ea	1,525	-	-	-	-	-	-	5,705	2,150	7,855
Switchboards, main circuit breaker, 3 pole, 3 wire, to 600 volt, 200 amp		1.00 ea	34.722 ch/ea	120.38 /ch	69	4,180	3,250.00 /ea	3,250	-	-	-	-	-	-	7,430	2,905	10,335
Switchboards, main ground fault protector, 1200 - 2000 amp		1.00 ea	7.716 ch/ea	120.38 /ch	15	929	5,200.00 /ea	5,200	-	-	-	-	-	-	6,129	2,605	8,734
Switchboards, current/potential transformer metering compartment, 200 - 800 amp		1.00 ea	7.716 ch/ea	120.38 /ch	15	929	2,225.00 /ea	2,225	-	-	-	-	-	-	3,154	1,303	4,457
Switchboards, contactor control, 60 amp		1.00 ea	20.833 ch/ea	120.38 /ch	42	2,508	2,050.00 /ea	2,050	-	-	-	-	-	-	4,558	1,787	6,345
Switchboards, dog house 12", add		1.00 ea	17.361 ch/ea	120.38 /ch	35	2,090	360.00 /ea	360	-	-	-	-	-	-	2,450	899	3,349
Switchboards, distribution section, aluminum bus bars, subfeed lug-rated, 200 amp, excl breakers	STP Loading Control Panel PP-105KW-12	9.00 ea	34.722 ch/ea	120.38 /ch	625	37,619	1,725.00 /ea	15,525	-	-	-	-	-	-	53,144	20,138	73,282
Circuit breakers, plug-in, 1 P, 120/240 volt	STP Loading area lighting	1.00 ea	3.472 ch/ea	60.19 /ch	3	209	12.25 /ea	12	-	-	-	-	-	-	221	79	301
Motor control center, starters, class 1, type B, comb. MCP, FVNR, with control XFMR, size 1, 10 HP, 12" high, incl starters & structures	P-01	1.00 ea	15.432 ch/ea	60.19 /ch	15	929	1,775.00 /ea	1,775	-	-	-	-	-	-	2,704	1,106	3,810
Motor control center, starters, class 1, type B, comb. MCP, FVNR, with control XFMR, size 1, 10 HP, 12" high, incl starters & structures	P-05, P-06	2.00 ea	15.432 ch/ea	60.19 /ch	31	1,858	1,775.00 /ea	3,550	-	-	-	-	-	-	5,408	2,213	7,620
Motor control center, starters, class 1, type B, comb. MCP, FVNR, with control XFMR, size 2, 25 HP, 18" high, incl starters & structures	P-XX, P-XX	2.00 ea	10.417 ch/ea	120.38 /ch	42	2,508	2,025.00 /ea	4,050	-	-	-	-	-	-	6,558	2,662	9,220
Motor control center, for pilot lights, add per starter		3.00 ea	2.604 ch/ea	60.19 /ch	8	470	124.00 /ea	372	-	-	-	-	-	-	842	330	1,172
Motor control center, for push button, add per starter	CNTAC -1 &-3	2.00 ea	2.604 ch/ea	60.19 /ch	5	313	124.00 /ea	248	-	-	-	-	-	-	561	220	781
Motor control center, for auxiliary contacts, add per starter	CNTAC -4	1.00 ea	2.604 ch/ea	60.19 /ch	3	157	259.00 /ea	259	-	-	-	-	-	-	416	169	585
Motor control center, for auxiliary contacts, add per starter	CNTAC-5	1.00 ea	2.604 ch/ea	60.19 /ch	3	157	259.00 /ea	259	-	-	-	-	-	-	416	169	585
Circuit breaker, 3 pole, 600 volt, 30 amp, enclosed (NEMA 1)	Breakers 2, 3, 4, 5, 7, 8, 9, 10, 11 - 15, 20, 30 amps	1.00 ea	13.021 ch/ea	60.19 /ch	13	784	610.00 /ea	610	-	-	-	-	-	-	1,394	545	1,939
Circuit breaker, 3 pole, 600 volt, 60 amp, enclosed (NEMA 1)	Breaker 1, 12 -50 & 45 amps	2.00 ea	14.881 ch/ea	60.19 /ch	30	1,791	610.00 /ea	1,220	-	-	-	-	-	-	3,011	1,169	4,181
Circuit breaker, 3 pole, 600 volt, 100 amp, enclosed (NEMA 1)	Breaker 6 -90 amp	1.00 ea	18.116 ch/ea	60.19 /ch	18	1,090	700.00 /ea	700	-	-	-	-	-	-	1,790	693	2,484
Safety switches, heavy duty, 3 pole, fusible, 600 volt, 30 amp, NEMA 1		7.00 ea	13.021 ch/ea	60.19 /ch	91	5,486	310.00 /ea	2,170	-	-	-	-	-	-	7,656	2,896	10,552
Safety switches, heavy duty, 3 pole, fusible, 600 volt, 60 amp, NEMA 1		1.00 ea	18.116 ch/ea	60.19 /ch	18	1,090	375.00 /ea	375	-	-	-	-	-	-	1,465	551	2,016
Safety switches, heavy duty, 3 pole, fusible, 600 volt, 100 amp, NEMA 1		4.00 ea	21.930 ch/ea	60.19 /ch	88	5,280	685.00 /ea	2,740	-	-	-	-	-	-	8,020	3,072	11,092
Control switches, push button, momentary contact, std oper, w/ colored button, 600 V 10 A	YL / HS	4.00 ea	1.225 ch/ea	60.19 /ch	5	295	16.50 /ea	66	-	-	-	-	-	-	361	134	495
Control switches, push button, momentary contact, std oper, w/ colored button, 600 V 10 A	YL / HS	8.00 ea	1.225 ch/ea	60.19 /ch	10	590	16.50 /ea	132	-	-	-	-	-	-	722	267	989
Variable frequency drives, enclosed, 460 volt, 5 HP motor size, NEMA 1	VFD-X	1.00 ea	52.083 ch/ea	60.19 /ch	52	3,135	1,700.00 /ea	1,700	-	-	-	-	-	-	4,835	1,856	6,691
Variable frequency drives, enclosed, 460 volt, 10 HP motor size, NEMA 1	STP-VFD-1	1.00 ea	62.189 ch/ea	60.19 /ch	62	3,743	2,025.00 /ea	2,025	-	-	-	-	-	-	5,768	2,214	7,982
Variable frequency drives, enclosed, 460 volt, 15 HP motor size, NEMA 1	STP-VFD-X	1.00 ea	46.816 ch/ea	120.38 /ch	94	5,636	2,325.00 /ea	2,325	-	-	-	-	-	-	7,961	3,017	10,977
Variable frequency drives, enclosed, 460 volt, 25 HP motor size, NEMA 1	Breaker50 Amp VFD 15 HP	1.00 ea	62.189 ch/ea	120.38 /ch	124	7,486	4,025.00 /ea	4,025	-	-	-	-	-	-	11,511	4,417	15,928
Variable frequency drives, enclosed, 460 volt, 25 HP motor size, NEMA 1	STP-VFD-3	1.00 ea	62.189 ch/ea	120.38 /ch	124	7,486	4,025.00 /ea	4,025	-	-	-	-	-	-	11,511	4,417	15,928
LS15030513 Electrical					2,893	174,120		76,668							250,788	95,315	346,103
LS15030913 HVAC																	
HEPA Filtration Unit	Ionex, 303-475-0296, Doug Porey, HEPA filter, transition, fan, discharge damper,1000cfm	2.00 ea		-		-	/ea		-	-	10,000.00 /ea	20,000	-	-	20,000	8,754	28,754
Metal ductwork,fabricted rectngir,galv steel,200 500lb, includes fittings,joints,supports and allowance for a flexible connection,excludes insulation	Metal Ductwork, fabricated rectangular, galvanized steel, 200 to 500 lb., includes fittings, joints, supports and allowance for a flexible connection, excludes insulation	900.00 lb	0.170 ch/lb	177.75 /ch	459	27,203	0.99 /lb	891	-	-	-	-	-	-	28,094	10,039	38,133
LS15030913 HVAC					459	27,203		891				20,000			48,094	18,792	66,887
LS15031613 INSTRUMENTATION																	
Control Components, Flow Transmitter	FE/FIT - Mass Flow/Flow-Magnetic	5.00 ea	10.417 ch/ea	55.36 /ch	52	2,883	4,500.00 /ea	22,500	-	-	-	-	-	-	25,383	10,871	36,254
Control Components, Pressure	DPIT - Transmitter	3.00 ea	3.472 ch/ea	55.36 /ch	10	577	3,100.00 /ea	9,300	-	-	-	-	-	-	9,877	4,275	14,152
Pressure, transmitter	STP_PT_XXX	9.00 ea	78.125 ch/ea	55.36 /ch	703	38,925	2,900.00 /ea	26,100	-	-	-	-	-	-	65,025	25,230	90,255
Pressure Sensor/switch	STP-LDE/LDK-XXX	3.00 ea	5.208 ch/ea	55.36 /ch	16	865	2,200.00 /ea	6,600	-	-	-	-	-	-	7,465	3,196	10,661
Control Components, Turbidity / % Solids	AE/AIT - Transmitter	4.00 ea	5.208 ch/ea	55.36 /ch	21	1,153	213.00 /ea	852	-	-	-	-	-	-	2,005	782	2,787
Load cell / scale	STP-WE/WIT-xxx	1.00 ea	5.208 ch/ea	55.36 /ch	5	288	6,000.00 /ea	6,000	-	-	-	-	-	-	6,288	2,728	9,017
LS15031613 INSTRUMENTATION					807	44,692		71,352							116,044	47,081	163,125
LS15031713 Mechanical																	
Gasket and bolt set, for flanges, 150 lb., 1/2" pipe size	IXM Water	3.00 ea	2.083 ch/ea	55.36 /ch	6	346	2.16 /ea	6	-	-	-	-	-	-	352	126	478
Gasket and bolt set, for flanges, 150 lb., 1/2" pipe size	conda head line	1.00 ea	2.083 ch/ea	55.36 /ch	2	115	2.16 /ea	2	-	-	-	-	-	-	117	42	159
Gasket and bolt set, for flanges, 150 lb., 1/2" pipe size	motive water liine	1.00 ea	2.083 ch/ea	55.36 /ch	2	115	2.16 /ea	2	-	-	-	-	-	-	117	42	159
Gasket and bolt set, for flanges, 150 lb., 1/2" pipe size	fluidizing jets line	3.00 ea	2.083 ch/ea	55.36 /ch	6	346	2.16 /ea	6	-	-	-	-	-	-	352	126	478
Pipe, stainless steel, welded, 3/4" pipe size, schedule 40, type 304, includes weld joint and clevis type hangers 10' OC	conda head line	50.00 lf	0.382 ch/lf	110.72 /ch	38	2,116	7.15 /lf	358	-	-	16.78 /ch	321	-	-	2,794	1,047	3,842
Pipe, stainless steel, welded, 1" pipe size, schedule 40, type 304, includes weld joint and clevis type hangers 10' OC	motive water liine	50.00 lf	0.439 ch/lf	110.72 /ch	44	2,428	9.60 /lf	480	-	-	16.78 /ch	368	-	-	3,276	1,232	4,508

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS15031713 Mechanical																	
Pipe, stainless steel, welded, 1" pipe size, schedule 40, type 304, includes weld joint and clevis type hangers 10' OC	fluidizing jets line	50.00 lf	0.439 ch/lf	110.72 /ch	44	2,428	9.60 /lf	480	-	-	16.78 /ch	368	-	-	3,276	1,232	4,508
Pipe, stainless steel, welded, 4" pipe size, schedule 40, type 304, includes weld joint and clevis type hangers 10' OC	IXM Water	50.00 lf	1.068 ch/lf	110.72 /ch	107	5,915	40.50 /lf	2,025	-	-	16.78 /ch	896	-	-	8,836	3,376	12,212
Flange, stainless steel, threaded companion, 150 lb., 3/4" diam., type 304, excludes gasket and bolts	conda head line	4.00 ea	1.488 ch/ea	55.36 /ch	6	330	39.00 /ea	156	-	-	-	-	-	-	486	185	671
Flange, stainless steel, threaded companion, 150 lb., 3/4" diam., type 304, excludes gasket and bolts	conda head line	1.00 ea	1.488 ch/ea	55.36 /ch	1	82	39.00 /ea	39	-	-	-	-	-	-	121	46	168
Flange, stainless steel, threaded companion, 150 lb., 1" diam., type 304, excludes gasket and bolts	motive water liine	4.00 ea	1.543 ch/ea	55.36 /ch	6	342	43.00 /ea	172	-	-	-	-	-	-	514	196	710
Flange, stainless steel, threaded companion, 150 lb., 1" diam., type 304, excludes gasket and bolts	motive water liine	1.00 ea	1.543 ch/ea	55.36 /ch	2	85	43.00 /ea	43	-	-	-	-	-	-	128	49	178
Flange, stainless steel, threaded companion, 150 lb., 1" diam., type 304, excludes gasket and bolts	fluidizing jets line	4.00 ea	1.543 ch/ea	55.36 /ch	6	342	43.00 /ea	172	-	-	-	-	-	-	514	197	710
Flange, stainless steel, threaded companion, 150 lb., 1" diam., type 304, excludes gasket and bolts	fluidizing jets line	3.00 ea	1.543 ch/ea	55.36 /ch	5	256	43.00 /ea	129	-	-	-	-	-	-	385	147	533
Flange, stainless steel, threaded companion, 150 lb., 4" diam., type 304, excludes gasket and bolts	IXM Water	3.00 ea	3.472 ch/ea	110.72 /ch	21	1,153	144.00 /ea	432	-	-	-	-	-	-	1,585	598	2,183
Flange, stainless steel, threaded companion, 150 lb., 6" diam., type 304, excludes gasket and bolts	IXM Water	4.00 ea	2.976 ch/ea	55.36 /ch	12	659	259.00 /ea	1,036	-	-	-	-	-	-	1,695	687	2,382
Elbow, 90 Deg., stainless steel, threaded, 150 lb., 3/4", type 304	conda head line	1.00 ea	3.788 ch/ea	55.36 /ch	4	210	27.00 /ea	27	-	-	-	-	-	-	237	86	323
Elbow, 90 Deg., stainless steel, threaded, 150 lb., 1", type 304	motive water liine	1.00 ea	4.167 ch/ea	55.36 /ch	4	231	35.50 /ea	36	-	-	-	-	-	-	266	97	364
Elbow, 90 Deg., stainless steel, threaded, 150 lb., 1", type 304	fluidizing jets line	1.00 ea	4.167 ch/ea	55.36 /ch	4	231	35.50 /ea	36	-	-	-	-	-	-	266	97	364
Tee, stainless steel, straight, threaded, 150 lb., 4", type 304	IXM Water	2.00 ea	5.952 ch/ea	55.36 /ch	12	659	1,300.00 /ea	2,600	-	-	-	-	-	-	3,259	1,372	4,631
Pressure regulator, safety valve	PSV-01, PSV-03	2.00 ea	3.472 ch/ea	110.72 /ch	14	769	200.00 /ea	400	-	-	-	-	-	-	1,169	448	1,617
Pump,general utility,centrifugal,in-line,vertical mount,iron body,125lb flanged,3550 rpm,single stage,75 gpm,5 hp, 1-1/2"discharge,includes tefc motor	P-XX Decant	1.00 ea	26.042 ch/ea	110.72 /ch	52	2,883	1,075.00 /ea	1,075	-	-	-	-	-	-	3,958	1,493	5,452
Pump,general utility,cntrfgl,in-line,vertical mount,iron body,125lb flanged,3550 rpm,single stage,125 gpm,10 hp, 1-1/2"discharge,includes tefc motor	P-01 Feed Pump 7.5 HP	1.00 ea	24.510 ch/ea	110.72 /ch	49	2,714	1,525.00 /ea	1,525	-	-	-	-	-	-	4,239	1,630	5,869
Pump,general utility,cntrfgl,in-line,vertical mount,iron body,125lb flanged,3550 rpm,single stage,200 gpm,30 hp, 1-1/2"discharge,includes tefc motor	P-03 High Pressure Pump 20 HP	1.00 ea	27.778 ch/ea	110.72 /ch	56	3,076	3,250.00 /ea	3,250	-	-	-	-	-	-	6,326	2,513	8,839
Pump,general utility,centrifugal,in-line,vertical mount,iron body,125lb flanged,3550 rpm,single stage,300 gpm,50 hp, 3"discharge,includes tefc motor	P-XX Filter Backwash	1.00 ea	32.051 ch/ea	110.72 /ch	64	3,549	4,100.00 /ea	4,100	-	-	-	-	-	-	7,649	3,053	10,702
Valves, steel, cast, globe, flanged, 150 lb., 3"	V-?	1.00 ea	9.259 ch/ea	55.36 /ch	9	513	1,100.00 /ea	1,100	-	-	-	-	-	-	1,613	663	2,276
Valves, stainless steel, ball, threaded, 3/4"	V-2	1.00 ea	2.083 ch/ea	55.36 /ch	2	115	67.50 /ea	68	-	-	-	-	-	-	183	70	253
Valves, stainless steel, ball, threaded, 1"	V-1, V-3, V-4, V-5	4.00 ea	2.193 ch/ea	55.36 /ch	9	486	82.00 /ea	328	-	-	-	-	-	-	814	316	1,129
Valves, stainless steel, ball, threaded, 1-1/2"	V-?	1.00 ea	3.205 ch/ea	55.36 /ch	3	177	163.00 /ea	163	-	-	-	-	-	-	340	134	475
Valves, stainless steel, ball, threaded, 1-1/2"	Valves decant line	4.00 ea	3.205 ch/ea	55.36 /ch	13	710	163.00 /ea	652	-	-	-	-	-	-	1,362	537	1,899
Valves, stainless steel, ball, threaded, 1-1/2"	Valves sludge line	4.00 ea	3.205 ch/ea	55.36 /ch	13	710	163.00 /ea	652	-	-	-	-	-	-	1,362	537	1,899
Valves, stainless steel, check, threaded, 200 lb., 3/4"	CV-2	1.00 ea	2.083 ch/ea	55.36 /ch	2	115	138.00 /ea	138	-	-	-	-	-	-	253	101	355
Valves, stainless steel, check, threaded, 200 lb., 1"	CV-1, CV-3	2.00 ea	2.193 ch/ea	55.36 /ch	4	243	176.00 /ea	352	-	-	-	-	-	-	595	240	835
Valves, stainless steel, check, flanged, 150 lb., 3"	STP-CV-?	1.00 ea	9.259 ch/ea	110.72 /ch	19	1,025	1,375.00 /ea	1,375	-	-	-	-	-	-	2,400	965	3,366
Control Components, transmitter	DPIT Differential Pressure	3.00 ea	41.667 ch/ea	55.36 /ch	125	6,920	3,100.00 /ea	9,300	-	-	-	-	-	-	16,220	6,525	22,745
1 1/2" ID High-Performance Polyethylene Chemical Hose	H - 1 _McMaster Carr	150.00 lf	0.781 mh/lf	55.36 /mh	117	6,488	14.58 /lf	2,187	-	-	-	-	-	-	8,675	3,258	11,933
1 1/2" ID High-Performance Polyethylene Chemical Hose	H - 3 _McMaster Carr	5.00 lf	0.781 mh/lf	55.36 /mh	4	216	14.58 /lf	73	-	-	-	-	-	-	289	109	398
1 1/2" ID High-Performance Polyethylene Chemical Hose	H - 8 _McMaster Carr	5.00 lf	0.781 mh/lf	55.36 /mh	4	216	14.58 /lf	73	-	-	-	-	-	-	289	109	398
1 1/2" ID High-Performance Polyethylene Chemical Hose	H - 2 _McMaster Carr	150.00 lf	0.781 mh/lf	55.36 /mh	117	6,488	14.58 /lf	2,187	-	-	-	-	-	-	8,675	3,258	11,933
1 1/2" ID Hose Fittings	H - 3 _McMaster Carr	1.00 set	2.604 ch/set	55.36 /ch	3	144	174.38 /lf		-	-	-	-	-	-	144	51	195
1 1/2" ID Hose Fittings	H - 8 _McMaster Carr	1.00 set	2.604 ch/set	55.36 /ch	3	144	174.38 /set	174	-	-	-	-	-	-	319	127	446
1 1/2" ID Hose Fittings	H - 1 _McMaster Carr	1.00 set	2.604 ch/set	55.36 /ch	3	144	174.38 /set	174	-	-	-	-	-	-	319	127	446
1 1/2" ID Hose Fittings	H - 2 _McMaster Carr	1.00 set	2.604 ch/set	55.36 /ch	3	144	174.38 /set	174	-	-	-	-	-	-	319	127	446
3/4 " ID Hose, Heavy Duty High-Pressure	McMaster Carr	150.00 lf	0.781 mh/lf	55.36 /mh	117	6,488	3.84 /lf	576	-	-	-	-	-	-	7,064	2,553	9,617
3/4 " ID Hose Fittings Heavy Duty High-Pressure	McMaster Carr	3.00 set	2.604 ch/set	55.36 /ch	8	433	55.04 /set	165	-	-	-	-	-	-	598	226	823
1 " ID Hose. Heavy Duty High-Pressure	McMaster Carr	300.00 lf	0.781 mh/lf	55.36 /mh	234	12,975	4.75 /lf	1,425	-	-	-	-	-	-	14,400	5,226	19,626
1 " ID Hose Fittings Heavy Duty High-Pressure	McMaster Carr	6.00 set	2.604 ch/set	55.36 /ch	16	865	73.74 /set	442	-	-	-	-	-	-	1,307	500	1,808
XAGO Tool Install	Nuvision Engineernng -	1.00 ea	41.667 ch/ea	57.10 /ch	42	2,379	-	-	-	/ea	-	-	-	-	2,379	844	3,223
Pulsation Damper (3 gallon tank with rubber bladder)		3.00 ea	31.328 ch/ea	110.72 /ch	188	10,406	1,000.00 /ea	3,000	-	-	16.78 /ch	1,577	-	-	14,983	5,694	20,677
Diaphragm Seal		7.00 ea	10.417 ch/ea	110.72 /ch	146	8,073	1,000.00 /ea	7,000	-	-	16.78 /ch	1,223	-	-	16,297	6,463	22,759
LS15031713 Mechanical					1,769	97,996		50,366				4,752			153,114	58,882	211,996
LS18010414 Clean out &Decon existing Annex																	
First Line Supervisors		3.00 wk	40.000 ch/wk	78.54 /ch	120	9,425	-	-	-	-	-	-	-	-	9,425	1,646	11,071
NCO's	2ea	3.00 wk	138.400 ch/wk	54.70 /ch	415	22,711	-	-	-	-	-	-	-	-	22,711	3,967	26,679
Health Physics Technicians	2ea	3.00 wk	80.000 ch/wk	53.43 /ch	240	12,823	-	-	-	-	-	-	-	-	12,823	2,240	15,063
LS18010414 Clean out &Decon existing Annex	Reactivate FTS system				775	44,959									44,959	7,854	52,813
LS18010514 Clean out 1 additional cell at TPlant																	
Drum, Removable Head, White, 55 GLL(0.207m3), DOT 17C	2003 Costs_Note: Pricing 10-2-03_Escalated to 2007 dollars ($)	194.00 ea		-		-	50.53 /ea	9,802	-	-	-	-	-	-	9,802	2,526	12,328
Box, Metal, DOT Strong tight, 4' x 4' x 6' (2.718m3), w/composite liner	2002 Costs_Note: ROCKY Flats PROCUREMENT WAREHOUSE CATALOG 10/4/02_Escalated to 2007 dollars ($)	15.00 ea		-		-	810.64 /ea	12,160	-	-	-	-	-	-	12,160	3,133	15,293
Macro encapsulation - Permafix Cat 1		40.00 m3		-		-	-	-	3,500.00 /m3	140,000	-	-	-	-	140,000	24,456	164,456
Macro encapsulation - Permafix Cat 3		31.50 m3		-		-	-	-	6,000.00 /m3	189,000	-	-	-	-	189,000	33,016	222,016
First Line Supervisors		1.00 wk	40.000 ch/wk	78.54 /ch	40	3,142	-	-	-	-	-	-	-	-	3,142	549	3,690
Material Moving Equipment Operators		1.00 wk	40.000 ch/wk	56.91 /ch	40	2,276	-	-	-	-	-	-	-	-	2,276	398	2,674
Other Operators		1.00 wk	40.000 ch/wk	57.10 /ch	40	2,284	-	-	-	-	-	-	-	-	2,284	399	2,683
Health Physics Technicians		1.00 wk	40.000 ch/wk	53.43 /ch	40	2,137	-	-	-	-	-	-	-	-	2,137	373	2,511
LS18010514 Clean out 1 additional cell at TPlant					160	9,839		21,962		329,000					360,801	64,850	425,651
LS18010614 Install new Cell equipment																	
Set frames		1.00 ea	28.662 ch/ea	341.64 /ch	172	9,792	182.00 /ea	182	-	-	195.88 /ch	5,614	-	-	15,588	6,010	21,599
Set leak detection support frames		1.00 ea	28.662 ch/ea	341.64 /ch	172	9,792	182.00 /ea	182	-	-	195.88 /ch	5,614	-	-	15,588	6,010	21,599
Set sump pump support frames		1.00 ea	28.662 ch/ea	341.64 /ch	172	9,792	182.00 /ea	182	-	-	195.88 /ch	5,614	-	-	15,588	6,010	21,599
Set containment basins		1.00 ea	28.662 ch/ea	341.64 /ch	172	9,792	182.00 /ea	182	-	-	195.88 /ch	5,614	-	-	15,588	6,010	21,599
Set overpack container		1.00 ea	28.662 ch/ea	341.64 /ch	172	9,792	182.00 /ea	182	-	-	195.88 /ch	5,614	-	-	15,588	6,010	21,599

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS18010614 Install new Cell equipment																	
Flexible metal hose, stainless steel braided, welded on carbon steel ends, threaded, 1/2" diameter x 12"	McMaster Carr 54905K32	1.00 ea	1.062 ch/ea	55.36 /ch	1	59	52.20 /ea	52	-	-	-	-	-	-	111	44	155
Flexible metal hose, stainless steel braided, welded on carbon steel ends, threaded, 1/2" diameter x 12"	McMaster Carr 54905K32	1.00 ea	1.062 ch/ea	55.36 /ch	1	59	52.20 /ea	52	-	-	-	-	-	-	111	44	155
Flexible metal hose, metal stainless steel braid, 1/2" diameter x 1"	McMaster Carr 54905K32 $1.25 per inch or $15 per foot	25.00 lf		/lf			15.00 /lf	375	-	-	-	-	-	-	375	164	539
Flexible metal hose, metal stainless steel braid, 1/2" diameter x 1"	McMaster Carr 54905K32 $1.25 per inch or $15 per foot	25.00 lf		/lf			15.00 /lf	375	-	-	-	-	-	-	375	164	539
Pump, pedestal sump, solid brass, 21 GPM, 1/3 H.P., at 15' head, includes float control		1.00 ea	5.096 ch/ea	55.36 /ch	5	282	251.00 /ea	251	-	-	-	-	-	-	533	210	743
Pump, pedestal sump, solid brass, 21 GPM, 1/3 H.P., at 15' head, includes float control		1.00 ea	5.096 ch/ea	55.36 /ch	5	282	251.00 /ea	251	-	-	-	-	-	-	533	210	743
Wire connector, screw type, #18 to #10		16.00 ea	0.106 ch/ea	60.19 /ch	2	102	0.15 /ea	2	-	-	-	-	-	-	105	37	142
Wire connector, screw type, #18 to #10		6.00 ea	0.106 ch/ea	59.61 /ch	1	38	0.15 /ea	1	-	-	-	-	-	-	39	14	53
Wire connector, screw type, #18 to #10		16.00 ea	0.106 ch/ea	60.19 /ch	2	102	0.15 /ea	2	-	-	-	-	-	-	105	37	142
Wire connector, screw type, #18 to #10		6.00 ea	0.106 ch/ea	59.61 /ch	1	38	0.15 /ea	1	-	-	-	-	-	-	39	14	53
Portable cord, type SO, 600 volt, 3 conductor, #12, in tray or exposed		60.00 lf	0.030 ch/lf	60.19 /ch	2	110	0.92 /lf	55	-	-	-	-	-	-	165	63	228
Portable cord, type SO, 600 volt, 3 conductor, #12, in tray or exposed		60.00 lf	0.030 ch/lf	60.19 /ch	2	110	0.92 /lf	55	-	-	-	-	-	-	165	63	228
Wire, copper, solid, 600 volt, #10, type THWN-THHN, in raceway		27.15 clf	2.564 ch/clf	59.61 /ch	70	4,149	23.00 /clf	624	-	-	-	-	-	-	4,774	1,745	6,519
Wire, copper, solid, 600 volt, #10, type THWN-THHN, in raceway		27.15 clf	2.564 ch/clf	59.61 /ch	70	4,149	23.00 /clf	624	-	-	-	-	-	-	4,774	1,745	6,519
Control cable, copper, THHN wire with PVC jacket, 600 V, 8 wires, #14		28.40 clf	4.807 ch/clf	60.19 /ch	137	8,217	69.50 /clf	1,974	-	-	-	-	-	-	10,191	3,778	13,970
Control cable, copper, THHN wire with PVC jacket, 600 V, 8 wires, #14		28.40 clf	4.807 ch/clf	60.19 /ch	137	8,217	69.50 /clf	1,974	-	-	-	-	-	-	10,191	3,778	13,970
Rigid galvanized steel conduit, 3/4" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	control conduit	350.00 lf	0.318 ch/lf	60.19 /ch	111	6,709	2.54 /lf	889	-	-	-	-	-	-	7,598	2,769	10,367
Rigid galvanized steel conduit, 3/4" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	power conduit	900.00 lf	0.318 ch/lf	59.61 /ch	287	17,084	2.54 /lf	2,286	-	-	-	-	-	-	19,370	7,060	26,431
Rigid galvanized steel conduit, 3/4" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	control conduit	350.00 lf	0.318 ch/lf	60.19 /ch	111	6,709	2.54 /lf	889	-	-	-	-	-	-	7,598	2,769	10,367
Rigid galvanized steel conduit, 3/4" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	power conduit	900.00 lf	0.318 ch/lf	59.61 /ch	287	17,084	2.54 /lf	2,286	-	-	-	-	-	-	19,370	7,060	26,431
Pull boxes, sheet metal, type SC, raintight & weatherproof, 6" L x 6" W x 6" D, NEMA 3R	power conduit	18.00 ea	2.548 ch/ea	59.61 /ch	46	2,734	21.00 /ea	378	-	-	-	-	-	-	3,112	1,135	4,247
Pull boxes, sheet metal, type SC, raintight & weatherproof, 6" L x 6" W x 6" D, NEMA 3R	power conduit	18.00 ea	2.548 ch/ea	59.61 /ch	46	2,734	21.00 /ea	378	-	-	-	-	-	-	3,112	1,135	4,247
Pull boxes, sheet metal, type SC, raintight & weatherproof, 8" L x 6" W x 6" D, NEMA 3R	control conduit	7.00 ea	3.185 ch/ea	60.19 /ch	22	1,342	26.00 /ea	182	-	-	-	-	-	-	1,524	556	2,079
Pull boxes, sheet metal, type SC, raintight & weatherproof, 8" L x 6" W x 6" D, NEMA 3R	control conduit	7.00 ea	3.185 ch/ea	60.19 /ch	22	1,342	26.00 /ea	182	-	-	-	-	-	-	1,524	556	2,079
Knockouts, metal boxes & enclosures, with hole saw, 3/4" pipe size, to 8' high	control conduit	14.00 ea	0.542 ch/ea	60.19 /ch	8	457	-	-	-	-	-	-	-	-	457	162	619
Knockouts, metal boxes & enclosures, with hole saw, 3/4" pipe size, to 8' high	power conduit	36.00 ea	0.542 ch/ea	59.61 /ch	20	1,163	-	-	-	-	-	-	-	-	1,163	413	1,576
Knockouts, metal boxes & enclosures, with hole saw, 3/4" pipe size, to 8' high	control conduit	14.00 ea	0.542 ch/ea	60.19 /ch	8	457	-	-	-	-	-	-	-	-	457	162	619
Knockouts, metal boxes & enclosures, with hole saw, 3/4" pipe size, to 8' high	power conduit	36.00 ea	0.542 ch/ea	59.61 /ch	20	1,163	-	-	-	-	-	-	-	-	1,163	413	1,576
Coaxial connectors, BNC jack for, RG A/U #59 cable		8.00 ea	0.607 ch/ea	60.19 /ch	5	292	4.73 /ea	38	-	-	-	-	-	-	330	120	450
Coaxial connectors, BNC jack for, RG A/U #59 cable		12.00 ea	0.607 ch/ea	60.19 /ch	7	438	4.73 /ea	57	-	-	-	-	-	-	495	180	675
Coaxial cable, 75 ohm, RG 6/U	2cable from each cell to Rm. 218	13.30 clf	3.185 ch/clf	60.19 /ch	42	2,549	32.00 /clf	426	-	-	-	-	-	-	2,975	1,091	4,066
Coaxial cable, 75 ohm, RG 6/U	2cable from each cell to Rm. 218	20.00 clf	3.185 ch/clf	60.19 /ch	64	3,834	32.00 /clf	640	-	-	-	-	-	-	4,474	1,640	6,114
Closed circuit television system (CCTV), surveillance, one station (camera & monitor)		1.00 totl	9.799 ch/totl	120.38 /ch	20	1,180	/totl	-	-	-	-	-	-	-	1,180	418	1,598
Closed circuit television system (CCTV), surveillance, one station (camera & monitor)		3.00 totl	9.799 ch/totl	120.38 /ch	59	3,539	/totl	-	-	-	-	-	-	-	3,539	1,255	4,794
Closed circuit television system (CCTV), surveillance, for additional camera stations, add		1.00 ea	9.436 ch/ea	60.19 /ch	9	568	/ea	-	-	-	-	-	-	-	568	201	769
Closed circuit television system (CCTV), industrial quality, for weatherproof camera station, add		2.00 ea	19.598 ch/ea	60.19 /ch	39	2,359	/ea	-	-	-	-	-	-	-	2,359	837	3,196
Closed circuit television system (CCTV), industrial quality, for pan and tilt, add		2.00 ea	19.598 ch/ea	60.19 /ch	39	2,359	/ea	-	-	-	-	-	-	-	2,359	837	3,196
Closed circuit television system (CCTV), industrial quality, for zoom lens - remote cont, add, min		2.00 ea	12.739 ch/ea	60.19 /ch	25	1,534	/ea	-	-	-	-	-	-	-	1,534	544	2,077
Video surveillance camera accessories, single camera VCR		2.00 ea	8.493 ch/ea	60.19 /ch	17	1,022	/ea	-	-	-	-	-	-	-	1,022	363	1,385
Leak Detection Systems, for hazardous liquids		1.00 ea	57.325 ch/ea	60.19 /ch	57	3,450	/ea	-	-	-	-	-	-	-	3,450	1,224	4,674
LS18010614 Install new Cell equipment	Additional Cell				2,664	156,978		16,210		28,071					201,259	75,059	276,319
FY13 Fiscal Year 2013					**9,706**	**564,926**		**238,949**		**408,118**		**52,823**			**1,264,816**	**399,794**	**1,664,611**
.15.03 Bldg. Modifications					**9,706**	**564,926**		**238,949**		**408,118**		**52,823**			**1,264,816**	**399,794**	**1,664,611**
15 Construction					9,706	564,926		238,949		408,118		52,823			1,264,816	399,794	1,664,611
16 Start up & Testing																	
.16.01 Start up & Testing																	
FY13 Fiscal Year 2013																	
LS16160113 CORAMI Evalation																	
Nuclear Engineers		2.00 wk	40.000 ch/wk	94.95 /ch	80	7,596	-	-	-	-	-	-	-	-	7,596	1,327	8,923
Quality Control Engineers		2.00 wk	40.000 ch/wk	75.25 /ch	80	6,020	-	-	-	-	-	-	-	-	6,020	1,052	7,072
Safety Engineer		2.00 wk	40.000 ch/wk	71.00 /ch	80	5,680	-	-	-	-	-	-	-	-	5,680	992	6,672
LS16160113 CORAMI Evalation					240	19,296									19,296	3,371	22,667
FY13 Fiscal Year 2013					**240**	**19,296**									**19,296**	**3,371**	**22,667**
.16.01 Start up & Testing					**240**	**19,296**									**19,296**	**3,371**	**22,667**
.16.02 Procedure Development																	
FY12 Fiscal Year 2012																	
LS16020412 NCO Support Prior to ORR																	
NCO's	4ea K Basin	26.00 wk	138.400 ch/wk	54.70 /ch	3,598	196,832	-	-	-	-	-	-	-	-	196,832	30,205	227,038
NCO's	4ea T Plant	26.00 wk	138.400 ch/wk	54.70 /ch	3,598	196,832	-	-	-	-	-	-	-	-	196,832	30,205	227,038
LS16020412 NCO Support Prior to ORR					7,197	393,665									393,665	60,411	454,076
FY12 Fiscal Year 2012					**7,197**	**393,665**									**393,665**	**60,411**	**454,076**
FY13 Fiscal Year 2013																	
LS16020113 Procedure Development Retrieval System																	
Nuclear Engineers		3.00 wk	40.000 ch/wk	94.95 /ch	120	11,394	-	-	-	-	-	-	-	-	11,394	1,990	13,384
Quality Control Engineers		3.00 wk	40.000 ch/wk	75.25 /ch	120	9,030	-	-	-	-	-	-	-	-	9,030	1,577	10,607
Safety Engineer		3.00 wk	40.000 ch/wk	71.00 /ch	120	8,520	-	-	-	-	-	-	-	-	8,520	1,488	10,008

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS16020113 Procedure Development Retrieval System																	
Industrial Hygienists		2.00 wk	40.000 ch/wk	72.95 /ch	80	5,836	-	-	-	-	-	-	-	-	5,836	1,019	6,855
Technical Writers & Editors		2.00 wk	40.000 ch/wk	66.18 /ch	80	5,294	-	-	-	-	-	-	-	-	5,294	925	6,219
LS16020113 Procedure Development Retrieval System					520	40,074									40,074	7,001	47,075
LS16020213 Procedure Development FTS System																	
Electrical Engineers	Update Safety Significant PM procedures	1.00 wk	40.000 ch/wk	79.21 /ch	40	3,168	-	-	-	-	-	-	-	-	3,168	553	3,722
Procedure Writers & Editors	Update Safety Significant PM procedures	1.00 wk	40.000 ch/wk	66.18 /ch	40	2,647	-	-	-	-	-	-	-	-	2,647	462	3,110
LS16020213 Procedure Development FTS System	Reactivate FTS system				80	5,816									5,816	1,016	6,832
LS16020413 NCO Support during ORR																	
NCO's	4ea K Baisin	52.00 wk	138.400 ch/wk	54.70 /ch	7,197	393,665	-	-	-	-	-	-	-	-	393,665	68,768	462,433
NCO's	4ea T Plant	52.00 wk	138.400 ch/wk	54.70 /ch	7,197	393,665	-	-	-	-	-	-	-	-	393,665	68,768	462,433
LS16020413 NCO Support during ORR					14,394	787,330									787,330	137,537	924,867
FY13 Fiscal Year 2013					**14,994**	**833,220**									**833,220**	**145,553**	**978,773**
.16.02 Procedure Development					**22,190**	**1,226,885**									**1,226,885**	**205,964**	**1,432,849**
.16.03 Readiness Activities / Planning																	
FY13 Fiscal Year 2013																	
LS16030113 Crew Training & ORR Preparations																	
Milwrights	2ea	52.00 wk	47.997 ch/wk	57.58 /ch	2,496	143,711	/wk	-	-	-	-	-	-	-	143,711	25,105	168,816
Riggers	2ea	52.00 wk	47.187 ch/wk	57.89 /ch	2,454	142,047	/wk	-	-	-	-	-	-	-	142,047	24,814	166,861
First Line Supervisors	2.5 ea	52.00 wk	43.476 ch/wk	78.54 /ch	2,261	177,559	-	-	-	-	-	-	-	-	177,559	31,017	208,577
NCO's	10ea	52.00 wk	249.697 ch/wk	54.70 /ch	12,984	710,237	-	-	-	-	-	-	-	-	710,237	124,069	834,306
Crane Equipment Operators	1 ea	52.00 wk	24.000 ch/wk	56.91 /ch	1,248	71,024	-	-	-	-	-	-	-	-	71,024	12,407	83,431
Health Physics Technicians	4.5 ea	52.00 wk	115.034 ch/wk	53.43 /ch	5,982	319,607	-	-	-	-	-	-	-	-	319,607	55,831	375,438
Health Physics Technicians Supervisor	.5 ea	52.00 wk	8.695 ch/wk	78.54 /ch	452	35,512	-	-	-	-	-	-	-	-	35,512	6,203	41,715
LS16030113 Crew Training & ORR Preparations					27,877	1,599,697									1,599,697	279,447	1,879,144
LS16160313 Readiness Activities / Planning																	
Nuclear Engineers		5.00 wk	40.000 ch/wk	94.95 /ch	200	18,990	-	-	-	-	-	-	-	-	18,990	3,317	22,307
Quality Control Engineers		5.00 wk	40.000 ch/wk	75.25 /ch	200	15,050	-	-	-	-	-	-	-	-	15,050	2,629	17,679
Safety Engineer		5.00 wk	40.000 ch/wk	71.00 /ch	200	14,200	-	-	-	-	-	-	-	-	14,200	2,481	16,681
Planner/Scheduler/Estimators		3.00 wk	40.000 ch/wk	86.56 /ch	120	10,387	-	-	-	-	-	-	-	-	10,387	1,815	12,202
LS16160313 Readiness Activities / Planning					720	58,627									58,627	10,241	68,869
FY13 Fiscal Year 2013					**28,597**	**1,658,324**									**1,658,324**	**289,688**	**1,948,012**
.16.03 Readiness Activities / Planning					**28,597**	**1,658,324**									**1,658,324**	**289,688**	**1,948,012**
.16.04 System Test																	
FY13 Fiscal Year 2013																	
LS16160413 System Test																	
Electrical Engineers		8.00 wk	40.000 ch/wk	79.21 /ch	320	25,347	-	-	-	-	-	-	-	-	25,347	4,428	29,775
Mechanical Engineers		8.00 wk	40.000 ch/wk	85.74 /ch	320	27,437	-	-	-	-	-	-	-	-	27,437	4,793	32,230
Plant Engineers		8.00 wk	40.000 ch/wk	68.98 /ch	320	22,074	-	-	-	-	-	-	-	-	22,074	3,856	25,930
Quality Control Engineers		8.00 wk	40.000 ch/wk	75.25 /ch	320	24,080	-	-	-	-	-	-	-	-	24,080	4,206	28,286
Construction Engineers		8.00 wk	40.000 ch/wk	100.10 /ch	320	32,032	-	-	-	-	-	-	-	-	32,032	5,596	37,628
LS16160413 System Test					1,600	130,970									130,970	22,879	153,848
FY13 Fiscal Year 2013					**1,600**	**130,970**									**130,970**	**22,879**	**153,848**
.16.04 System Test					**1,600**	**130,970**									**130,970**	**22,879**	**153,848**
.16.05 Start Up																	
FY13 Fiscal Year 2013																	
LS16050113 System Start Up																	
Electrician		4.00 wk	40.000 ch/wk	60.19 /ch	160	9,630	-	-	-	-	-	-	-	-	9,630	1,682	11,313
Nuclear Engineers		4.00 wk	40.000 ch/wk	94.95 /ch	160	15,192	-	-	-	-	-	-	-	-	15,192	2,654	17,846
Plant Engineers		4.00 wk	40.000 ch/wk	68.98 /ch	160	11,037	-	-	-	-	-	-	-	-	11,037	1,928	12,965
Quality Control Engineers		4.00 wk	40.000 ch/wk	75.25 /ch	160	12,040	-	-	-	-	-	-	-	-	12,040	2,103	14,143
Safety Engineer		4.00 wk	40.000 ch/wk	71.00 /ch	160	11,360	-	-	-	-	-	-	-	-	11,360	1,984	13,344
Material Moving Equipment Operators		4.00 wk	40.000 ch/wk	56.91 /ch	160	9,106	-	-	-	-	-	-	-	-	9,106	1,591	10,696
Nuclear Waste Process Operator		4.00 wk	40.000 ch/wk	58.05 /ch	160	9,288	-	-	-	-	-	-	-	-	9,288	1,623	10,911
Utilities System Operators		4.00 wk	40.000 ch/wk	49.54 /ch	160	7,926	-	-	-	-	-	-	-	-	7,926	1,385	9,311
Other Operators		4.00 wk	40.000 ch/wk	57.10 /ch	160	9,136	-	-	-	-	-	-	-	-	9,136	1,596	10,732
LS16050113 System Start Up					1,440	94,715									94,715	16,546	111,261
LS16050213 FTS Crane Inspection & Startup																	
Structural or Metal Worker	2 ea Riggers	3.00 wk	80.000 ch/wk	57.89 /ch	240	13,894	-	-	-	-	-	-	-	-	13,894	2,427	16,321
First Line Supervisors	1 ea	3.00 wk	40.000 ch/wk	78.54 /ch	120	9,425	-	-	-	-	-	-	-	-	9,425	1,646	11,071
Planner/	1 ea	3.00 wk	40.000 ch/wk	86.56 /ch	120	10,387	-	-	-	-	-	-	-	-	10,387	1,815	12,202
Health Physics Technicians	2 ea RCT's	3.00 wk	80.000 ch/wk	53.43 /ch	240	12,823	-	-	-	-	-	-	-	-	12,823	2,240	15,063
LS16050213 FTS Crane Inspection & Startup	Reactivate FTS system				720	46,529									46,529	8,128	54,657
LS16050313 Update FTS System Software for PLC																	
Electrical Engineers	Update, validate, & test PLC software	4.00 wk	40.000 ch/wk	79.21 /ch	160	12,674	-	-	-	-	-	-	-	-	12,674	2,214	14,888
LS16050313 Update FTS System Software for PLC	Reactivate FTS system				160	12,674									12,674	2,214	14,888
FY13 Fiscal Year 2013					**2,320**	**153,918**									**153,918**	**26,887**	**180,805**
.16.05 Start Up					**2,320**	**153,918**									**153,918**	**26,887**	**180,805**
.16 Start up & Testing					54,947	3,189,392									3,189,392	548,789	3,738,181
.17 Risk																	
.17.01 Risk																	
FY10 Fiscal Year 2010																	
LS17170110 Risk																	
Risk		1.00 ls		0.00 /ls		0	0.00 /ls	0	-	-	-	-	789,786.00 /ls	789,786	789,786	88,659	878,445
LS17170110 Risk														789,786	789,786	88,659	878,445
FY10 Fiscal Year 2010														**789,786**	**789,786**	**88,659**	**878,445**
FY11 Fiscal Year 2011																	
LS17170111 Risk																	
Risk		1.00 ls		0.00 /ls		0	0.00 /ls	0	-	-	-	-	1,298,724.00 /ls	1,298,724	1,298,724	172,285	1,471,009
LS17170111 Risk														1,298,724	1,298,724	172,285	1,471,009
FY11 Fiscal Year 2011														**1,298,724**	**1,298,724**	**172,285**	**1,471,009**
FY12 Fiscal Year 2012																	
LS17170112 Risk																	

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS17170112 Risk																	
Risk		1.00 ls		0.00 /ls		0	0.00 /ls	0	-	-	-	-	1,891,626.00 /ls	1,891,626	1,891,626	290,284	2,181,910
LS17170112 Risk														1,891,626	1,891,626	290,284	2,181,910
FY12 Fiscal Year 2012														**1,891,626**	**1,891,626**	**290,284**	**2,181,910**
FY13 Fiscal Year 2013																	
LS17170113 Risk																	
Risk		1.00 ls		0.00 /ls		0	0.00 /ls	0	-	-	-	-	6,390,410.00 /ls	6,390,410	6,390,410	1,116,324	7,506,734
LS17170113 Risk														6,390,410	6,390,410	1,116,324	7,506,734
FY13 Fiscal Year 2013														**6,390,410**	**6,390,410**	**1,116,324**	**7,506,734**
.17.01 Risk														**10,370,546**	**10,370,546**	**1,667,552**	**12,038,098**
.17 Risk														10,370,546	10,370,546	1,667,552	12,038,098
.18 Operations and Maintenance																	
.18.01 Operations																	
FY14 Fiscal Year 2014																	
LS18010114 XAGO operation and Container Loading																	
Millwrights	2ea	52.00 wk	47.997 ch/wk	57.58 /ch	2,496	143,711	/wk	-	-	-	-	-	-	-	143,711	28,216	171,927
Riggers	2ea	52.00 wk	47.187 ch/wk	57.89 /ch	2,454	142,047	/wk	-	-	-	-	-	-	-	142,047	27,889	169,937
First Line Supervisors	2.5 ea	52.00 wk	43.476 ch/wk	78.54 /ch	2,261	177,559	-	-	-	-	-	-	-	-	177,559	34,862	212,421
NCO's	10ea	52.00 wk	249.697 ch/wk	54.70 /ch	12,984	710,237	-	-	-	-	-	-	-	-	710,237	139,446	849,683
Crane Equipment Operators	1 ea	52.00 wk	24.000 ch/wk	56.91 /ch	1,248	71,024	-	-	-	-	-	-	-	-	71,024	13,945	84,968
Health Physics Technicians	4.5 ea	52.00 wk	115.034 ch/wk	53.43 /ch	5,982	319,607	-	-	-	-	-	-	-	-	319,607	62,751	382,357
Health Physics Technicians Supervisor	.5 ea	52.00 wk	8.695 ch/wk	78.54 /ch	452	35,512	-	-	-	-	-	-	-	-	35,512	6,972	42,484
LS18010114 XAGO operation and Container Loading					27,877	1,599,697									1,599,697	314,060	1,913,777
LS18010314 Small Canister Unloading @ Tplant																	
Millwrights	2 ea	52.00 wk	47.997 ch/wk	57.58 /ch	2,496	143,711	-	-	-	-	-	-	-	-	143,711	28,216	171,926
Structural or Metal Worker	2 ea	52.00 wk	47.997 ch/wk	57.89 /ch	2,496	144,484	-	-	-	-	-	-	-	-	144,484	28,368	172,852
Quality Control Engineers	1 ea	52.00 wk	24.000 ch/wk	75.25 /ch	1,248	93,912	-	-	-	-	-	-	-	-	93,912	18,438	112,350
First Line Supervisors	1 ea	52.00 wk	24.000 ch/wk	78.54 /ch	1,248	98,018	-	-	-	-	-	-	-	-	98,018	19,245	117,263
Industrial Hygienists	1 ea	52.00 wk	24.000 ch/wk	72.95 /ch	1,248	91,042	-	-	-	-	-	-	-	-	91,042	17,875	108,916
Material Moving Equipment Operators	1 ea	52.00 wk	16.000 ch/wk	56.91 /ch	832	47,349	-	-	-	-	-	-	-	-	47,349	9,296	56,646
Other Operators	2 ea	52.00 wk	47.997 ch/wk	57.10 /ch	2,496	142,513	-	-	-	-	-	-	-	-	142,513	27,981	170,493
Health Physics Technicians	3 ea	52.00 wk	72.000 ch/wk	53.43 /ch	3,744	200,042	-	-	-	-	-	-	-	-	200,042	39,276	239,318
LS18010314 Small Canister Unloading @ Tplant					15,808	961,070									961,070	188,694	1,149,764
FY14 Fiscal Year 2014					**43,684**	**2,560,767**									**2,560,767**	**502,774**	**3,063,542**
FY15 Fiscal Year 2015																	
LS18010114 XAGO operation and Container Loading																	
Millwrights	2ea	8.00 wk	47.997 ch/wk	57.58 /ch	384	22,109	/wk	-	-	-	-	-	-	-	22,109	2,040	24,149
Riggers	2ea	8.00 wk	47.187 ch/wk	57.89 /ch	377	21,853	/wk	-	-	-	-	-	-	-	21,853	2,016	23,870
First Line Supervisors	2.5 ea	8.00 wk	43.476 ch/wk	78.54 /ch	348	27,317	-	-	-	-	-	-	-	-	27,317	2,520	29,837
NCO's	10ea	8.00 wk	249.697 ch/wk	54.70 /ch	1,998	109,267	-	-	-	-	-	-	-	-	109,267	10,081	119,348
Crane Equipment Operators	1 ea	8.00 wk	24.000 ch/wk	56.91 /ch	192	10,927	-	-	-	-	-	-	-	-	10,927	1,008	11,935
Health Physics Technicians	4.5 ea	8.00 wk	115.034 ch/wk	53.43 /ch	920	49,170	-	-	-	-	-	-	-	-	49,170	4,536	53,707
Health Physics Technicians Supervisor	.5 ea	8.00 wk	8.695 ch/wk	78.54 /ch	70	5,463	-	-	-	-	-	-	-	-	5,463	504	5,967
LS18010114 XAGO operation and Container Loading					4,289	246,107									246,107	22,705	268,812
LS18010314 Small Canister Unloading @ Tplant																	
Millwrights	2 ea	8.00 wk	47.997 ch/wk	57.58 /ch	384	22,109	-	-	-	-	-	-	-	-	22,109	2,040	24,149
Structural or Metal Worker	2 ea	8.00 wk	47.997 ch/wk	57.89 /ch	384	22,228	-	-	-	-	-	-	-	-	22,228	2,051	24,279
Quality Control Engineers	1 ea	8.00 wk	24.000 ch/wk	75.25 /ch	192	14,448	-	-	-	-	-	-	-	-	14,448	1,333	15,781
First Line Supervisors	1 ea	8.00 wk	24.000 ch/wk	78.54 /ch	192	15,080	-	-	-	-	-	-	-	-	15,080	1,391	16,471
Industrial Hygienists	1 ea	8.00 wk	24.000 ch/wk	72.95 /ch	192	14,006	-	-	-	-	-	-	-	-	14,006	1,292	15,299
Material Moving Equipment Operators	1 ea	8.00 wk	16.000 ch/wk	56.91 /ch	128	7,284	-	-	-	-	-	-	-	-	7,284	672	7,957
Other Operators	2 ea	8.00 wk	47.997 ch/wk	57.10 /ch	384	21,925	-	-	-	-	-	-	-	-	21,925	2,023	23,948
Health Physics Technicians	3 ea	8.00 wk	72.000 ch/wk	53.43 /ch	576	30,776	-	-	-	-	-	-	-	-	30,776	2,839	33,615
LS18010314 Small Canister Unloading @ Tplant					2,432	147,857									147,857	13,641	161,498
FY15 Fiscal Year 2015					**6,721**	**393,964**									**393,964**	**36,346**	**430,310**
.18.01 Operations					**50,405**	**2,954,731**									**2,954,731**	**539,120**	**3,493,852**
.18.02 Transportation																	
FY14 Fiscal Year 2014																	
LS18020114 Transport																	
Teamster Subcontract straight time	Fluor Hanford -3 teamster 3days (96mh/wk) Total trips 216 tatal canisters 462	187.20 trps		/trps			/trps		43.35 /ch	779,052	-	-	-	-	779,052	152,957	932,008
Teamster Subcontract over time	Fluor Hanford - 3 teamster 3days (12mh/wk) Total trips 216 tatal canisters 462	187.20 trps		/trps			/trps		65.03 /ch	146,083	-	-	-	-	146,083	28,682	174,765
LS18020114 Transport										925,135					925,135	181,639	1,106,773
FY14 Fiscal Year 2014										**925,135**					**925,135**	**181,639**	**1,106,773**
FY15 Fiscal Year 2015																	
LS18020115 Transport																	
Teamster Subcontract straight time	Fluor Hanford -3 teamster 3days (96mh/wk) Total trips 216 tatal canisters 462	28.80 trps		/trps			/trps		43.35 /ch	119,854	-	-	-	-	119,854	11,057	130,912
Teamster Subcontract over time	Fluor Hanford - 3 teamster 3days (12mh/wk) Total trips 216 tatal canisters 462	28.80 trps		/trps			/trps		65.03 /ch	22,474	-	-	-	-	22,474	2,073	24,548
LS18020115 Transport										142,328					142,328	13,131	155,459
FY15 Fiscal Year 2015										**142,328**					**142,328**	**13,131**	**155,459**
.18.02 Transportation										**1,067,463**					**1,067,463**	**194,769**	**1,262,233**
.18.03 Maintenance																	
FY10 Fiscal Year 2010																	
LS18030210 K West Basin Min Safe																	
Material & Equipment		1.00 ls		/ls			2,931,000.00 /ls	2,931,000	/ls		/ls		-	-	2,931,000	572,299	3,503,299
PNL		1.00 ls		/ls			/ls		13,300.00 /ls	13,300	/ls		-	-	13,300	1,493	14,793
Other Hanford Contractors		1.00 ls		/ls			/ls		352,900.00 /ls	352,900	/ls		-	-	352,900	39,616	392,516
Crane & Rigging		1.00 ls		/ls			/ls		113,100.00 /ls	113,100	/ls		-	-	113,100	12,696	125,796
Taxes & Licenses		1.00 ls		/ls			/ls		/ls		/ls		62,300.00 /ls	62,300	62,300	6,994	69,294
Contract Labor		1.00 ls		/ls			/ls		175,800.00 /ls	175,800	/ls		-	-	175,800	19,735	195,535
Freight		1.00 ls		/ls			/ls		14,100.00 /ls	14,100	/ls		-	-	14,100	1,583	15,683

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS18030210 K West Basin Min Safe																	
Carpenter		0.13 ea	######## ch/ea	51.18 /ch	225	11,516	-	-	-	-	-	-	-	-	11,516	1,293	12,808
Electrician		1.00 ea	######## ch/ea	60.19 /ch	1,800	108,342	-	-	-	-	-	-	-	-	108,342	12,162	120,504
Millwrights		0.25 ea	######## ch/ea	57.58 /ch	450	25,911	-	-	-	-	-	-	-	-	25,911	2,909	28,820
Painters		0.13 ea	######## ch/ea	57.89 /ch	225	13,025	-	-	-	-	-	-	-	-	13,025	1,462	14,487
Plumber or Pipefitter		0.25 ea	######## ch/ea	55.36 /ch	450	24,912	-	-	-	-	-	-	-	-	24,912	2,797	27,709
Chemical Engineers- E010		0.25 ea	######## ch/ea	81.66 /ch	450	36,747	-	-	-	-	-	-	-	-	36,747	4,125	40,872
Civil Engineers		0.50 ea	######## ch/ea	92.33 /ch	900	83,097	-	-	-	-	-	-	-	-	83,097	9,328	92,425
Electrical Engineers		0.50 ea	######## ch/ea	79.21 /ch	900	71,289	-	-	-	-	-	-	-	-	71,289	8,003	79,292
Environmental Engineers		0.13 ea	######## ch/ea	82.98 /ch	225	18,671	-	-	-	-	-	-	-	-	18,671	2,096	20,766
Mechanical Engineers		0.06 ea	######## ch/ea	85.74 /ch	108	9,260	-	-	-	-	-	-	-	-	9,260	1,039	10,299
Nuclear Engineers		0.08 ea	######## ch/ea	94.95 /ch	144	13,673	-	-	-	-	-	-	-	-	13,673	1,535	15,208
Plant Engineers		2.25 ea	######## ch/ea	68.98 /ch	4,050	279,369	-	-	-	-	-	-	-	-	279,369	31,361	310,730
Quality Control Engineers		0.20 ea	######## ch/ea	75.25 /ch	360	27,090	-	-	-	-	-	-	-	-	27,090	3,041	30,131
Safety Engineer		1.10 ea	######## ch/ea	71.00 /ch	1,980	140,580	-	-	-	-	-	-	-	-	140,580	15,781	156,361
Other Engineers		1.30 ea	######## ch/ea	106.23 /ch	2,340	248,578	-	-	-	-	-	-	-	-	248,578	27,905	276,483
Construction Engineers		0.01 ea	######## ch/ea	100.10 /ch	18	1,802	-	-	-	-	-	-	-	-	1,802	202	2,004
Administrative Assistants		1.50 ea	######## ch/ea	47.45 /ch	2,700	128,115	-	-	-	-	-	-	-	-	128,115	14,382	142,497
Office Clerks (General)		1.00 ea	######## ch/ea	36.74 /ch	1,800	66,132	-	-	-	-	-	-	-	-	66,132	7,424	73,556
Secretaries		1.00 ea	######## ch/ea	36.30 /ch	1,800	65,340	-	-	-	-	-	-	-	-	65,340	7,335	72,675
First Line Supervisors		1.00 ea	######## ch/ea	78.54 /ch	1,800	141,372	-	-	-	-	-	-	-	-	141,372	15,870	157,242
Managers & Executives		2.90 ea	######## ch/ea	102.62 /ch	5,220	535,676	-	-	-	-	-	-	-	-	535,676	60,134	595,810
Planner/Scheduler/Estimators		0.75 ea	######## ch/ea	86.56 /ch	1,350	116,856	-	-	-	-	-	-	-	-	116,856	13,118	129,974
Health Physicists		0.80 ea	######## ch/ea	76.01 /ch	1,440	109,454	-	-	-	-	-	-	-	-	109,454	12,287	121,741
Industrial Hygienists		0.50 ea	######## ch/ea	72.95 /ch	900	65,655	-	-	-	-	-	-	-	-	65,655	7,370	73,025
Trainer		1.00 ea	######## ch/ea	75.63 /ch	1,800	136,134	-	-	-	-	-	-	-	-	136,134	15,282	151,416
Technical Writers & Editors		0.85 ea	######## ch/ea	66.18 /ch	1,530	101,255	-	-	-	-	-	-	-	-	101,255	11,367	112,622
Other Professionals		0.85 ea	######## ch/ea	89.60 /ch	1,530	137,088	-	-	-	-	-	-	-	-	137,088	15,389	152,477
Buyers/Procurement/Contracting		0.01 ea	######## ch/ea	70.24 /ch	18	1,264	-	-	-	-	-	-	-	-	1,264	142	1,406
Nuclear Waste Process Operator		9.15 ea	######## ch/ea	58.05 /ch	16,470	956,084	-	-	-	-	-	-	-	-	956,084	107,327	1,063,411
Environmental Scientists		0.50 ea	######## ch/ea	71.72 /ch	900	64,548	-	-	-	-	-	-	-	-	64,548	7,246	71,794
Technicians		0.50 ea	######## ch/ea	56.63 /ch	900	50,967	-	-	-	-	-	-	-	-	50,967	5,721	56,688
Drafters		0.25 ea	######## ch/ea	99.37 /ch	450	44,717	-	-	-	-	-	-	-	-	44,717	5,020	49,736
Health Physics Technicians		7.50 ea	######## ch/ea	53.43 /ch	13,500	721,305	-	-	-	-	-	-	-	-	721,305	80,972	802,277
Instrument & Control Tech		0.05 ea	######## ch/ea	60.48 /ch	90	5,443	-	-	-	-	-	-	-	-	5,443	611	6,054
Motor Carrier Services		1.00 ls		/ls				/ls	139.90 /ls	140	-	-	-	-	140	16	156
LS18030210 K West Basin Min Safe					68.823	4,561,267		2,931,000		669,340				62,300	8,223,907	1,166,467	9,390,374
FY10 Fiscal Year 2010					**68,823**	**4,561,267**		**2,931,000**		**669,340**				**62,300**	**8,223,907**	**1,166,467**	**9,390,374**
FY11 Fiscal Year 2011																	
LS18030211 K West Basin Min Safe																	
Material & Equipment		1.00 ls		/ls			2,931,000.00 /ls	2,931,000	/ls		/ls		-	-	2,931,000	632,092	3,563,092
PNL		1.00 ls		/ls			/ls		13,300.00 /ls	13,300	/ls		-	-	13,300	1,764	15,064
Other Hanford Contractors		1.00 ls		/ls			/ls		352,900.00 /ls	352,900	/ls		-	-	352,900	46,815	399,715
Crane & Rigging		1.00 ls		/ls			/ls		113,100.00 /ls	113,100	/ls		-	-	113,100	15,004	128,104
Taxes & Licenses		1.00 ls		/ls			/ls		/ls		/ls		62,300.00 /ls	62,300	62,300	8,265	70,565
Contract Labor		1.00 ls		/ls			/ls		175,800.00 /ls	175,800	/ls		-	-	175,800	23,321	199,121
Freight		1.00 ls		/ls			/ls		14,100.00 /ls	14,100	/ls		-	-	14,100	1,870	15,970
Carpenter		0.13 ea	######## ch/ea	51.18 /ch	225	11,516	-	-	-	-	-	-	-	-	11,516	1,528	13,043
Electrician		1.00 ea	######## ch/ea	60.19 /ch	1,800	108,342	-	-	-	-	-	-	-	-	108,342	14,372	122,714
Millwrights		0.25 ea	######## ch/ea	57.58 /ch	450	25,911	-	-	-	-	-	-	-	-	25,911	3,437	29,348
Painters		0.13 ea	######## ch/ea	57.89 /ch	225	13,025	-	-	-	-	-	-	-	-	13,025	1,728	14,753
Plumber or Pipefitter		0.25 ea	######## ch/ea	55.36 /ch	450	24,912	-	-	-	-	-	-	-	-	24,912	3,305	28,217
Chemical Engineers- E010		0.25 ea	######## ch/ea	81.66 /ch	450	36,747	-	-	-	-	-	-	-	-	36,747	4,875	41,622
Civil Engineers		0.50 ea	######## ch/ea	92.33 /ch	900	83,097	-	-	-	-	-	-	-	-	83,097	11,023	94,120
Electrical Engineers		0.50 ea	######## ch/ea	79.21 /ch	900	71,289	-	-	-	-	-	-	-	-	71,289	9,457	80,746
Environmental Engineers		0.13 ea	######## ch/ea	82.98 /ch	225	18,671	-	-	-	-	-	-	-	-	18,671	2,477	21,147
Mechanical Engineers		0.06 ea	######## ch/ea	85.74 /ch	108	9,260	-	-	-	-	-	-	-	-	9,260	1,228	10,488
Nuclear Engineers		0.08 ea	######## ch/ea	94.95 /ch	144	13,673	-	-	-	-	-	-	-	-	13,673	1,814	15,487
Plant Engineers		2.25 ea	######## ch/ea	68.98 /ch	4,050	279,369	-	-	-	-	-	-	-	-	279,369	37,060	316,429
Quality Control Engineers		0.20 ea	######## ch/ea	75.25 /ch	360	27,090	-	-	-	-	-	-	-	-	27,090	3,594	30,684
Safety Engineer		1.10 ea	######## ch/ea	71.00 /ch	1,980	140,580	-	-	-	-	-	-	-	-	140,580	18,649	159,229
Other Engineers		1.30 ea	######## ch/ea	106.23 /ch	2,340	248,578	-	-	-	-	-	-	-	-	248,578	32,976	281,554
Construction Engineers		0.01 ea	######## ch/ea	100.10 /ch	18	1,802	-	-	-	-	-	-	-	-	1,802	239	2,041
Administrative Assistants		1.50 ea	######## ch/ea	47.45 /ch	2,700	128,115	-	-	-	-	-	-	-	-	128,115	16,995	145,110
Office Clerks (General)		1.00 ea	######## ch/ea	36.74 /ch	1,800	66,132	-	-	-	-	-	-	-	-	66,132	8,773	74,905
Secretaries		1.00 ea	######## ch/ea	36.30 /ch	1,800	65,340	-	-	-	-	-	-	-	-	65,340	8,668	74,008
First Line Supervisors		1.00 ea	######## ch/ea	78.54 /ch	1,800	141,372	-	-	-	-	-	-	-	-	141,372	18,754	160,126
Managers & Executives		2.90 ea	######## ch/ea	102.62 /ch	5,220	535,676	-	-	-	-	-	-	-	-	535,676	71,061	606,738
Planner/Scheduler/Estimators		0.75 ea	######## ch/ea	86.56 /ch	1,350	116,856	-	-	-	-	-	-	-	-	116,856	15,502	132,358
Health Physicists		0.80 ea	######## ch/ea	76.01 /ch	1,440	109,454	-	-	-	-	-	-	-	-	109,454	14,520	123,974
Industrial Hygienists		0.50 ea	######## ch/ea	72.95 /ch	900	65,655	-	-	-	-	-	-	-	-	65,655	8,710	74,365
Trainer		1.00 ea	######## ch/ea	75.63 /ch	1,800	136,134	-	-	-	-	-	-	-	-	136,134	18,059	154,193
Technical Writers & Editors		0.85 ea	######## ch/ea	66.18 /ch	1,530	101,255	-	-	-	-	-	-	-	-	101,255	13,432	114,688
Other Professionals		0.85 ea	######## ch/ea	89.60 /ch	1,530	137,088	-	-	-	-	-	-	-	-	137,088	18,186	155,274
Buyers/Procurement/Contracting		0.01 ea	######## ch/ea	70.24 /ch	18	1,264	-	-	-	-	-	-	-	-	1,264	168	1,432
Nuclear Waste Process Operator		9.15 ea	######## ch/ea	58.05 /ch	16,470	956,084	-	-	-	-	-	-	-	-	956,084	126,832	1,082,915
Environmental Scientists		0.50 ea	######## ch/ea	71.72 /ch	900	64,548	-	-	-	-	-	-	-	-	64,548	8,563	73,111
Technicians		0.50 ea	######## ch/ea	56.63 /ch	900	50,967	-	-	-	-	-	-	-	-	50,967	6,761	57,728
Drafters		0.25 ea	######## ch/ea	99.37 /ch	450	44,717	-	-	-	-	-	-	-	-	44,717	5,932	50,648
Health Physics Technicians		7.50 ea	######## ch/ea	53.43 /ch	13,500	721,305	-	-	-	-	-	-	-	-	721,305	95,686	816,991
Instrument & Control Tech		0.05 ea	######## ch/ea	60.48 /ch	90	5,443	-	-	-	-	-	-	-	-	5,443	722	6,165
Motor Carrier Services		1.00 ls		/ls				/ls	139.90 /ls	140	-	-	-	-	140	19	158
LS18030211 K West Basin Min Safe					68.823	4,561,267		2,931,000		669,340				62,300	8,223,907	1,334,235	9,558,141
FY11 Fiscal Year 2011					**68,823**	**4,561,267**		**2,931,000**		**669,340**				**62,300**	**8,223,907**	**1,334,235**	**9,558,141**
FY12 Fiscal Year 2012																	
LS18030212 K West Basin Min Safe																	
Material & Equipment		1.00 ls		/ls			2,931,000.00 /ls	2,931,000	/ls		/ls		-	-	2,931,000	693,057	3,624,057

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS18030212 K West Basin Min Safe																	
PNL		1.00 ls		/ls			/ls		13,300.00 /ls	13,300	/ls	-		-	13,300	2,041	15,341
Other Hanford Contractors		1.00 ls		/ls			/ls		352,900.00 /ls	352,900	/ls	-		-	352,900	54,155	407,055
Crane & Rigging		1.00 ls		/ls			/ls		113,100.00 /ls	113,100	/ls	-		-	113,100	17,356	130,456
Taxes & Licenses		1.00 ls		/ls			/ls		/ls		/ls		62,300.00 /ls	62,300	62,300	9,560	71,860
Contract Labor		1.00 ls		/ls			/ls		175,800.00 /ls	175,800	/ls	-		-	175,800	26,978	202,778
Freight		1.00 ls		/ls			/ls		14,100.00 /ls	14,100	/ls	-		-	14,100	2,164	16,264
Carpenter		0.13 ea	######## ch/ea	51.18 /ch	225	11,516	-	-	-	-	-	-	-	-	11,516	1,767	13,283
Electrician		1.00 ea	######## ch/ea	60.19 /ch	1,800	108,342	-	-	-	-	-	-	-	-	108,342	16,626	124,968
Millwrights		0.25 ea	######## ch/ea	57.58 /ch	450	25,911	-	-	-	-	-	-	-	-	25,911	3,976	29,887
Painters		0.13 ea	######## ch/ea	57.89 /ch	225	13,025	-	-	-	-	-	-	-	-	13,025	1,999	15,024
Plumber or Pipefitter		0.25 ea	######## ch/ea	55.36 /ch	450	24,912	-	-	-	-	-	-	-	-	24,912	3,823	28,735
Chemical Engineers- E010		0.25 ea	######## ch/ea	81.66 /ch	450	36,747	-	-	-	-	-	-	-	-	36,747	5,639	42,386
Civil Engineers		0.50 ea	######## ch/ea	92.33 /ch	900	83,097	-	-	-	-	-	-	-	-	83,097	12,752	95,849
Electrical Engineers		0.50 ea	######## ch/ea	79.21 /ch	900	71,289	-	-	-	-	-	-	-	-	71,289	10,940	82,229
Environmental Engineers		0.13 ea	######## ch/ea	82.98 /ch	225	18,671	-	-	-	-	-	-	-	-	18,671	2,865	21,536
Mechanical Engineers		0.06 ea	######## ch/ea	85.74 /ch	108	9,260	-	-	-	-	-	-	-	-	9,260	1,421	10,681
Nuclear Engineers		0.08 ea	######## ch/ea	94.95 /ch	144	13,673	-	-	-	-	-	-	-	-	13,673	2,098	15,771
Plant Engineers		2.25 ea	######## ch/ea	68.98 /ch	4,050	279,369	-	-	-	-	-	-	-	-	279,369	42,871	322,240
Quality Control Engineers		0.20 ea	######## ch/ea	75.25 /ch	360	27,090	-	-	-	-	-	-	-	-	27,090	4,157	31,247
Safety Engineer		1.10 ea	######## ch/ea	71.00 /ch	1,980	140,580	-	-	-	-	-	-	-	-	140,580	21,573	162,153
Other Engineers		1.30 ea	######## ch/ea	106.23 /ch	2,340	248,578	-	-	-	-	-	-	-	-	248,578	38,146	286,724
Construction Engineers		0.01 ea	######## ch/ea	100.10 /ch	18	1,802	-	-	-	-	-	-	-	-	1,802	277	2,078
Administrative Assistants		1.50 ea	######## ch/ea	47.45 /ch	2,700	128,115	-	-	-	-	-	-	-	-	128,115	19,660	147,775
Office Clerks (General)		1.00 ea	######## ch/ea	36.74 /ch	1,800	66,132	-	-	-	-	-	-	-	-	66,132	10,148	76,280
Secretaries		1.00 ea	######## ch/ea	36.30 /ch	1,800	65,340	-	-	-	-	-	-	-	-	65,340	10,027	75,367
First Line Supervisors		1.00 ea	######## ch/ea	78.54 /ch	1,800	141,372	-	-	-	-	-	-	-	-	141,372	21,695	163,067
Managers & Executives		2.90 ea	######## ch/ea	102.62 /ch	5,220	535,676	-	-	-	-	-	-	-	-	535,676	82,203	617,880
Planner/Scheduler/Estimators		0.75 ea	######## ch/ea	86.56 /ch	1,350	116,856	-	-	-	-	-	-	-	-	116,856	17,932	134,788
Health Physicists		0.80 ea	######## ch/ea	76.01 /ch	1,440	109,454	-	-	-	-	-	-	-	-	109,454	16,797	126,251
Industrial Hygienists		0.50 ea	######## ch/ea	72.95 /ch	900	65,655	-	-	-	-	-	-	-	-	65,655	10,075	75,730
Trainer		1.00 ea	######## ch/ea	75.63 /ch	1,800	136,134	-	-	-	-	-	-	-	-	136,134	20,891	157,025
Technical Writers & Editors		0.85 ea	######## ch/ea	66.18 /ch	1,530	101,255	-	-	-	-	-	-	-	-	101,255	15,538	116,794
Other Professionals		0.85 ea	######## ch/ea	89.60 /ch	1,530	137,088	-	-	-	-	-	-	-	-	137,088	21,037	158,125
Buyers/Procurement/Contracting		0.01 ea	######## ch/ea	70.24 /ch	18	1,264	-	-	-	-	-	-	-	-	1,264	194	1,458
Nuclear Waste Process Operator		9.15 ea	######## ch/ea	58.05 /ch	16,470	956,084	-	-	-	-	-	-	-	-	956,084	146,718	1,102,802
Environmental Scientists		0.50 ea	######## ch/ea	71.72 /ch	900	64,548	-	-	-	-	-	-	-	-	64,548	9,905	74,453
Technicians		0.50 ea	######## ch/ea	56.63 /ch	900	50,967	-	-	-	-	-	-	-	-	50,967	7,821	58,788
Drafters		0.25 ea	######## ch/ea	99.37 /ch	450	44,717	-	-	-	-	-	-	-	-	44,717	6,862	51,579
Health Physics Technicians		7.50 ea	######## ch/ea	53.43 /ch	13,500	721,305	-	-	-	-	-	-	-	-	721,305	110,690	831,995
Instrument & Control Tech		0.05 ea	######## ch/ea	60.48 /ch	90	5,443	-	-	-	-	-	-	-	-	5,443	835	6,279
Motor Carrier Services		1.00 ls		/ls			/ls		139.90 /ls	140	-	-	-	-	140	21	161
LS18030212 K West Basin Min Safe					68.823	4,561,267		2,931,000		669,340				62,300	8,223,907	1,505,292	9,729,199
FY12 Fiscal Year 2012					**68,823**	**4,561,267**		**2,931,000**		**669,340**				**62,300**	**8,223,907**	**1,505,292**	**9,729,199**
FY13 Fiscal Year 2013																	
LS18030213 K West Basin Min Safe																	
Material & Equipment		1.00 ls		/ls			2,931,000.00 /ls	2,931,000	/ls		/ls	-		-	2,931,000	755,282	3,686,282
PNL		1.00 ls		/is			/ls		13,300.00 /ls	13,300	/ls	-		-	13,300	2,323	15,623
Other Hanford Contractors		1.00 ls		/is			/ls		352,900.00 /is	352,900	/ls	-		-	352,900	61,647	414,547
Crane & Rigging		1.00 ls		/is			/ls		113,100.00 /is	113,100	/ls	-		-	113,100	19,757	132,857
Taxes & Licenses		1.00 ls		/is			/ls		/ls		/ls		62,300.00 /is	62,300	62,300	10,883	73,183
Contract Labor		1.00 ls		/is			/ls		175,800.00 /is	175,800	/ls	-		-	175,800	30,710	206,510
Freight		1.00 ls		/is			/ls		14,100.00 /is	14,100	/ls	-		-	14,100	2,463	16,563
Carpenter		0.13 ea	######## ch/ea	51.18 /ch	225	11,516	-	-	-	-	-	-	-	-	11,516	2,012	13,527
Electrician		1.00 ea	######## ch/ea	60.19 /ch	1,800	108,342	-	-	-	-	-	-	-	-	108,342	18,926	127,268
Millwrights		0.25 ea	######## ch/ea	57.58 /ch	450	25,911	-	-	-	-	-	-	-	-	25,911	4,526	30,437
Painters		0.13 ea	######## ch/ea	57.89 /ch	225	13,025	-	-	-	-	-	-	-	-	13,025	2,275	15,301
Plumber or Pipefitter		0.25 ea	######## ch/ea	55.36 /ch	450	24,912	-	-	-	-	-	-	-	-	24,912	4,352	29,264
Chemical Engineers- E010		0.25 ea	######## ch/ea	81.66 /ch	450	36,747	-	-	-	-	-	-	-	-	36,747	6,419	43,166
Civil Engineers		0.50 ea	######## ch/ea	92.33 /ch	900	83,097	-	-	-	-	-	-	-	-	83,097	14,516	97,613
Electrical Engineers		0.50 ea	######## ch/ea	79.21 /ch	900	71,289	-	-	-	-	-	-	-	-	71,289	12,453	83,742
Environmental Engineers		0.13 ea	######## ch/ea	82.98 /ch	225	18,671	-	-	-	-	-	-	-	-	18,671	3,262	21,932
Mechanical Engineers		0.06 ea	######## ch/ea	85.74 /ch	108	9,260	-	-	-	-	-	-	-	-	9,260	1,618	10,878
Nuclear Engineers		0.08 ea	######## ch/ea	94.95 /ch	144	13,673	-	-	-	-	-	-	-	-	13,673	2,388	16,061
Plant Engineers		2.25 ea	######## ch/ea	68.98 /ch	4,050	279,369	-	-	-	-	-	-	-	-	279,369	48,802	328,171
Quality Control Engineers		0.20 ea	######## ch/ea	75.25 /ch	360	27,090	-	-	-	-	-	-	-	-	27,090	4,732	31,822
Safety Engineer		1.10 ea	######## ch/ea	71.00 /ch	1,980	140,580	-	-	-	-	-	-	-	-	140,580	24,558	165,138
Other Engineers		1.30 ea	######## ch/ea	106.23 /ch	2,340	248,578	-	-	-	-	-	-	-	-	248,578	43,423	292,002
Construction Engineers		0.01 ea	######## ch/ea	100.10 /ch	18	1,802	-	-	-	-	-	-	-	-	1,802	315	2,117
Administrative Assistants		1.50 ea	######## ch/ea	47.45 /ch	2,700	128,115	-	-	-	-	-	-	-	-	128,115	22,380	150,495
Office Clerks (General)		1.00 ea	######## ch/ea	36.74 /ch	1,800	66,132	-	-	-	-	-	-	-	-	66,132	11,552	77,684
Secretaries		1.00 ea	######## ch/ea	36.30 /ch	1,800	65,340	-	-	-	-	-	-	-	-	65,340	11,414	76,754
First Line Supervisors		1.00 ea	######## ch/ea	78.54 /ch	1,800	141,372	-	-	-	-	-	-	-	-	141,372	24,696	166,068
Managers & Executives		2.90 ea	######## ch/ea	102.62 /ch	5,220	535,676	-	-	-	-	-	-	-	-	535,676	93,576	629,252
Planner/Scheduler/Estimators		0.75 ea	######## ch/ea	86.56 /ch	1,350	116,856	-	-	-	-	-	-	-	-	116,856	20,413	137,269
Health Physicists		0.80 ea	######## ch/ea	76.01 /ch	1,440	109,454	-	-	-	-	-	-	-	-	109,454	19,120	128,575
Industrial Hygienists		0.50 ea	######## ch/ea	72.95 /ch	900	65,655	-	-	-	-	-	-	-	-	65,655	11,469	77,124
Trainer		1.00 ea	######## ch/ea	75.63 /ch	1,800	136,134	-	-	-	-	-	-	-	-	136,134	23,781	159,915
Technical Writers & Editors		0.85 ea	######## ch/ea	66.18 /ch	1,530	101,255	-	-	-	-	-	-	-	-	101,255	17,688	118,943
Other Professionals		0.85 ea	######## ch/ea	89.60 /ch	1,530	137,088	-	-	-	-	-	-	-	-	137,088	23,948	161,036
Buyers/Procurement/Contracting		0.01 ea	######## ch/ea	70.24 /ch	18	1,264	-	-	-	-	-	-	-	-	1,264	221	1,485
Nuclear Waste Process Operator		9.15 ea	######## ch/ea	58.05 /ch	16,470	956,084	-	-	-	-	-	-	-	-	956,084	167,016	1,123,099
Environmental Scientists		0.50 ea	######## ch/ea	71.72 /ch	900	64,548	-	-	-	-	-	-	-	-	64,548	11,276	75,824
Technicians		0.50 ea	######## ch/ea	56.63 /ch	900	50,967	-	-	-	-	-	-	-	-	50,967	8,903	59,870
Drafters		0.25 ea	######## ch/ea	99.37 /ch	450	44,717	-	-	-	-	-	-	-	-	44,717	7,811	52,528
Health Physics Technicians		7.50 ea	######## ch/ea	53.43 /ch	13,500	721,305	-	-	-	-	-	-	-	-	721,305	126,003	847,308
Instrument & Control Tech		0.05 ea	######## ch/ea	60.48 /ch	90	5,443	-	-	-	-	-	-	-	-	5,443	951	6,394

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS18030213 K West Basin Min Safe																	
Motor Carrier Services		1.00 ls		/ls			/ls		139.90 /ls	140	-	-	-	-	140	24	164
LS18030213 K West Basin Min Safe					68.823	4,561,267		2,931,000		669,340				62,300	8,223,907	1,679,886	9,903,792
FY13 Fiscal Year 2013					**68,823**	**4,561,267**		**2,931,000**		**669,340**				**62,300**	**8,223,907**	**1,679,886**	**9,903,792**
FY14 Fiscal Year 2014																	
LS18030114 Maintenance																	
Fuel, Oil, Grease, Tractor trailer maintenance		216.00 trps		/trps			50.00 /trps	10,800	/trps		100.00 /trps	21,600	-	-	32,400	9,051	41,451
LS18030114 Maintenance								10,800				21,600			32,400	9,051	41,451
LS18030214 K West Basin Min Safe																	
Material & Equipment		1.00 ls		/ls			2,931,000.00 /ls	2,931,000	/ls		0.00 /ls	0	-	-	2,931,000	818,738	3,749,738
PNL		1.00 is		/ls			0.00 /ls	0	13,300.00 /ls	13,300	/ls		-	-	13,300	2,611	15,911
Other Hanford Contractors		1.00 is		/ls			/ls		352,900.00 /ls	352,900	/ls		-	-	352,900	69,287	422,187
Crane & Rigging		1.00 is		/ls			/ls		113,100.00 /ls	113,100	/ls		-	-	113,100	22,206	135,306
Taxes & Licenses		1.00 is		/ls			/ls		/ls		/ls		62,300.00 /ls	62,300	62,300	12,232	74,532
Contract Labor		1.00 is		/ls			/ls		175,800.00 /ls	175,800	/ls		-	-	175,800	34,516	210,316
Freight		1.00 is		/ls			/ls		14,100.00 /ls	14,100	/ls		-	-	14,100	2,768	16,868
Carpenter		0.13 ea	######## ch/ea	51.18 /ch	225	11,516	-	-	-	-	-	-	-	-	11,516	2,261	13,776
Electrician		1.00 ea	######## ch/ea	60.19 /ch	1,800	108,342	-	-	-	-	-	-	-	-	108,342	21,272	129,614
Millwrights		0.25 ea	######## ch/ea	57.58 /ch	450	25,911	-	-	-	-	-	-	-	-	25,911	5,087	30,998
Painters		0.13 ea	######## ch/ea	57.89 /ch	225	13,025	-	-	-	-	-	-	-	-	13,025	2,557	15,583
Plumber or Pipefitter		0.25 ea	######## ch/ea	55.36 /ch	450	24,912	-	-	-	-	-	-	-	-	24,912	4,891	29,803
Chemical Engineers- E010		0.25 ea	######## ch/ea	81.66 /ch	450	36,747	-	-	-	-	-	-	-	-	36,747	7,215	43,962
Civil Engineers		0.50 ea	######## ch/ea	92.33 /ch	900	83,097	-	-	-	-	-	-	-	-	83,097	16,315	99,412
Electrical Engineers		0.50 ea	######## ch/ea	79.21 /ch	900	71,289	-	-	-	-	-	-	-	-	71,289	13,997	85,286
Environmental Engineers		0.13 ea	######## ch/ea	82.98 /ch	225	18,671	-	-	-	-	-	-	-	-	18,671	3,666	22,336
Mechanical Engineers		0.06 ea	######## ch/ea	85.74 /ch	108	9,260	-	-	-	-	-	-	-	-	9,260	1,818	11,078
Nuclear Engineers		0.08 ea	######## ch/ea	94.95 /ch	144	13,673	-	-	-	-	-	-	-	-	13,673	2,684	16,357
Plant Engineers		2.25 ea	######## ch/ea	68.98 /ch	4,050	279,369	-	-	-	-	-	-	-	-	279,369	54,851	334,220
Quality Control Engineers		0.20 ea	######## ch/ea	75.25 /ch	360	27,090	-	-	-	-	-	-	-	-	27,090	5,319	32,409
Safety Engineer		1.10 ea	######## ch/ea	71.00 /ch	1,980	140,580	-	-	-	-	-	-	-	-	140,580	27,601	168,181
Other Engineers		1.30 ea	######## ch/ea	106.23 /ch	2,340	248,578	-	-	-	-	-	-	-	-	248,578	48,805	297,383
Construction Engineers		0.01 ea	######## ch/ea	100.10 /ch	18	1,802	-	-	-	-	-	-	-	-	1,802	354	2,156
Administrative Assistants		1.50 ea	######## ch/ea	47.45 /ch	2,700	128,115	-	-	-	-	-	-	-	-	128,115	25,154	153,269
Office Clerks (General)		1.00 ea	######## ch/ea	36.74 /ch	1,800	66,132	-	-	-	-	-	-	-	-	66,132	12,984	79,116
Secretaries		1.00 ea	######## ch/ea	36.30 /ch	1,800	65,340	-	-	-	-	-	-	-	-	65,340	12,829	78,169
First Line Supervisors		1.00 ea	######## ch/ea	78.54 /ch	1,800	141,372	-	-	-	-	-	-	-	-	141,372	27,757	169,129
Managers & Executives		2.90 ea	######## ch/ea	102.62 /ch	5,220	535,676	-	-	-	-	-	-	-	-	535,676	105,173	640,850
Planner/Scheduler/Estimators		0.75 ea	######## ch/ea	86.56 /ch	1,350	116,856	-	-	-	-	-	-	-	-	116,856	22,943	139,799
Health Physicists		0.80 ea	######## ch/ea	76.01 /ch	1,440	109,454	-	-	-	-	-	-	-	-	109,454	21,490	130,944
Industrial Hygienists		0.50 ea	######## ch/ea	72.95 /ch	900	65,655	-	-	-	-	-	-	-	-	65,655	12,891	78,546
Trainer		1.00 ea	######## ch/ea	75.63 /ch	1,800	136,134	-	-	-	-	-	-	-	-	136,134	26,728	162,862
Technical Writers & Editors		0.85 ea	######## ch/ea	66.18 /ch	1,530	101,255	-	-	-	-	-	-	-	-	101,255	19,880	121,136
Other Professionals		0.85 ea	######## ch/ea	89.60 /ch	1,530	137,088	-	-	-	-	-	-	-	-	137,088	26,916	164,004
Buyers/Procurement/Contracting		0.01 ea	######## ch/ea	70.24 /ch	18	1,264	-	-	-	-	-	-	-	-	1,264	248	1,513
Nuclear Waste Process Operator		9.15 ea	######## ch/ea	58.05 /ch	16,470	956,084	-	-	-	-	-	-	-	-	956,084	187,715	1,143,798
Environmental Scientists		0.50 ea	######## ch/ea	71.72 /ch	900	64,548	-	-	-	-	-	-	-	-	64,548	12,673	77,221
Technicians		0.50 ea	######## ch/ea	56.63 /ch	900	50,967	-	-	-	-	-	-	-	-	50,967	10,007	60,974
Drafters		0.25 ea	######## ch/ea	99.37 /ch	450	44,717	-	-	-	-	-	-	-	-	44,717	8,780	53,496
Health Physics Technicians		7.50 ea	######## ch/ea	53.43 /ch	13,500	721,305	-	-	-	-	-	-	-	-	721,305	141,619	862,924
Instrument & Control Tech		0.05 ea	######## ch/ea	60.48 /ch	90	5,443	-	-	-	-	-	-	-	-	5,443	1,069	6,512
Motor Carrier Services		1.00 ls		0.00 /ls		0	0.00 /ls	0	139.90 /ls	140	-	-	-	-	140	27	167
LS18030214 K West Basin Min Safe					68.823	4,561,267		2,931,000		669,340				62,300	8,223,907	1,857,933	10,081,840
LS18030314 FTS Transfer System Maintenance Phase 1																	
Materials - traveling and acorn nuts		1.00 ls		/ls			10,000.00 /ls	10,000	/ls		/ls		-	-	10,000	2,793	12,793
Electrician	2ea two shifts	3.00 wk	160.000 ch/wk	60.19 /ch	480	28,891	-	-	-	-	-	-	-	-	28,891	5,672	34,564
Millwrights	3ea two shifts	3.00 wk	240.000 ch/wk	57.58 /ch	720	41,458	-	-	-	-	-	-	-	-	41,458	8,140	49,597
Structural or Metal Worker	2 ea Riggers two shifts	3.00 wk	160.000 ch/wk	57.89 /ch	480	27,787	-	-	-	-	-	-	-	-	27,787	5,456	33,243
First Line Supervisors	1 ea two shifts	3.00 wk	80.000 ch/wk	78.54 /ch	240	18,850	-	-	-	-	-	-	-	-	18,850	3,701	22,550
Planner	1 ea two shifts	3.00 wk	80.000 ch/wk	86.56 /ch	240	20,774	-	-	-	-	-	-	-	-	20,774	4,079	24,853
Health Physics Technicians	2ea two shifts	3.00 wk	160.000 ch/wk	53.43 /ch	480	25,646	-	-	-	-	-	-	-	-	25,646	5,035	30,682
LS18030314 FTS Transfer System Maintenance Phase 1	Replace 4 traveling nuts and 12 acorn nuts on FTS transfer system				2,640	163,406		10,000							173,406	34,876	208,283
LS18030414 FTS Transfer System Maintenance Phase 2																	
Materials - traveling and acorn nuts		1.00 ls		/ls			10,000.00 /ls	10,000	/ls		/ls		-	-	10,000	2,793	12,793
Electrician	2ea two shifts	3.00 wk	160.000 ch/wk	60.19 /ch	480	28,891	-	-	-	-	-	-	-	-	28,891	5,672	34,564
Millwrights	3ea two shifts	3.00 wk	240.000 ch/wk	57.58 /ch	720	41,458	-	-	-	-	-	-	-	-	41,458	8,140	49,597
Structural or Metal Worker	2 ea Riggers two shifts	3.00 wk	160.000 ch/wk	57.89 /ch	480	27,787	-	-	-	-	-	-	-	-	27,787	5,456	33,243
First Line Supervisors	1 ea two shifts	3.00 wk	80.000 ch/wk	78.54 /ch	240	18,850	-	-	-	-	-	-	-	-	18,850	3,701	22,550
Planner	1 ea two shifts	3.00 wk	80.000 ch/wk	86.56 /ch	240	20,774	-	-	-	-	-	-	-	-	20,774	4,079	24,853
Health Physics Technicians	2ea two shifts	3.00 wk	160.000 ch/wk	53.43 /ch	480	25,646	-	-	-	-	-	-	-	-	25,646	5,035	30,682
LS18030414 FTS Transfer System Maintenance Phase 2	Replace 4 traveling nuts and 12 acorn nuts on FTS transfer system				2,640	163,406		10,000							173,406	34,876	208,283
FY14 Fiscal Year 2014					**74,103**	**4,888,079**		**2,961,800**		**669,340**		**21,600**		**62,300**	**8,603,119**	**1,936,736**	**10,539,855**
.18.03 Maintenance					**349,395**	**23,133,146**		**14,685,800**		**3,346,699**		**21,600**		**311,500**	**41,498,746**	**7,622,616**	**49,121,361**
.18 Operations and Maintenance					399,800	26,087,878		14,685,800		4,414,163		21,600		311,500	45,520,941	8,356,505	53,877,446
.19 Deactivation & Decommissioning																	
.19.01 Deactivation & Decommissioning																	
FY14 Fiscal Year 2014																	
LS19190114 D&D Planning																	
First Line Supervisors		***0.00 wk***	***34.600 ch/wk***	***78.54 /ch***		***0***	-	-	-	-	-	-	-	-	***0***	***0***	***0***
Project & Program Managers		***0.00 wk***	***34.600 ch/wk***	***###### /ch***		***0***	-	-	-	-	-	-	-	-	***0***	***0***	***0***
Planner/Scheduler/Estimators		***0.00 wk***	***34.600 ch/wk***	***86.56 /ch***		***0***	-	-	-	-	-	-	-	-	***0***	***0***	***0***
.19.02 Demolition																	
FY15 Fiscal Year 2015																	
LS19020115 Field Staff																	

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS19020115 Field Staff																	
Project Manager		*0.00 wk*	*40.000 ch/wk*	*##### /ch*		*0*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Project Project Engineer		*0.00 wk*	*40.000 mh/wk*	*91.36 /mh*		*0*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Superintendent		*0.00 wk*	*40.000 mh/wk*	*96.30 /mh*		*0*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Field Engineer		*0.00 wk*	*40.000 mh/wk*	*64.20 /mh*		*0*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Health & Safety		*0.00 wk*	*40.000 mh/wk*	*83.95 /mh*		*0*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Quality Assurance / Quality Control		*0.00 wk*	*40.000 mh/wk*	*83.95 /mh*		*0*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Radiation Control Technician		*0.00 wk*	*40.000 mh/wk*	*64.20 /mh*		*0*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Project Controls - Estimating, Scheduling		*0.00 wk*	*40.000 mh/wk*	*54.49 /mh*		*0*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Time Keeper		*0.00 wk*	*40.000 mh/wk*	*39.73 /mh*		*0*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Clerk		*0.00 wk*	*40.000 mh/wk*	*14.43 /mh*		*0*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
LS19020215 Field Office																	
Office Trailer, furnished, rent per month, 50' x 12', excl. hookups		*0.00 ea*		*-*		*-*	*375.00 /ea*	*0*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Field Office Expense, office equipment rental, average		*0.00 mo*		*-*		*-*	*150.00 /mo*	*0*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Field Office Expense, office supplies, average		*0.00 mo*		*-*		*-*	*95.00 /mo*	*0*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Field Office Expense, telephone bill; avg. bill/month, incl. long dist.		*0.00 mo*		*-*		*-*	*210.00 /mo*	*0*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Field Office Expense, field office lights & HVAC		*0.00 mo*		*-*		*-*	*110.00 /mo*	*0*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
LS19020315 Demolition																	
LLMW - Disposal @ Hanford ERDIFF	*1.296 tons per cy concrete ruble*	*0.00 ton*		*-*		*-*	*-*	*-*	*40.00 /ton*	*0*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
LLMW - Disposal @ Hanford ERDIFF	*gantry crane, track, & Misc. items*	*0.00 ton*		*-*		*-*	*-*	*-*	*40.00 /ton*	*0*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Electrical Demolition	*Light poles, power panels, transformers, ect.*	*0.00 wk*	*40.000 ch/wk*	*##### /ch*		*0*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Disassemble gantry crane		*0.00 wk*	*40.000 ch/wk*	*##### /ch*		*0*	*-*	*-*	*-*	*-*	*153.13 /ch*	*-*	*-*	*-*	*0*	*0*	*0*
Selective site demolition, hydodemolition, concrete pavement, 4000 PSI, 12" depth		*0.00 sf*	*0.087 ch/sf*	*##### /ch*		*0*	*-*	*-*	*-*	*-*	*135.63 /ch*	*0*	*-*	*-*	*0*	*0*	*0*
Demolish, remove pavement & curb, remove bituminous pavement, 4" to 6" thick, excludes hauling and disposal fees		*0.00 sy*	*0.042 ch/sy*	*##### /ch*		*0*	*-*	*-*	*-*	*-*	*125.28 /ch*	*0*	*-*	*-*	*0*	*0*	*0*
Fencing demolition, remove chain link posts & fabric, 8' to 10' high		*0.00 lf*	*0.039 ch/lf*	*##### /ch*		*0*	*-*	*-*	*-*	*-*	*35.68 /ch*	*0*	*-*	*-*	*0*	*0*	*0*
Footings and foundations demolition, remove concrete footing, 2' thick, 3' wide, excludes disposal costs and dump fees		*0.00 lf*	*0.166 ch/lf*	*##### /ch*		*0*	*-*	*-*	*-*	*-*	*135.63 /ch*	*0*	*-*	*-*	*0*	*0*	*0*
Footings and foundations demolition, add for disposal, up to 5 miles, excludes disposal costs and dump fees		*0.00 cy*	*0.079 ch/cy*	*##### /ch*		*0*	*-*	*-*	*-*	*-*	*229.45 /ch*	*0*	*-*	*-*	*0*	*0*	*0*
Selectv metals demoltn,strt framing members,5 - 10 tons,remove whole cut into smaller pieces,incl loading,excl shoring,bracing,cutting,hauling,dumping	*Selective metals demolition, structural framing members, 5 - 10 tons, remove whole or cut up into smaller pieces, incl loading, excl shoring, bracing, cutting, hauling, dumping*	*0.00 ea*	*0.728 ch/ea*	*##### /ch*		*0*	*-*	*-*	*-*	*-*	*153.13 /ch*	*0*	*-*	*-*	*0*	*0*	*0*
Excavating, bulk bank measure, 2-1/2 C.Y. capacity = 95 C.Y./hour, front end loader, track mounted	*Remove Rock base*	*0.00 bcy*	*0.023 ch/bcy*	*68.51 /ch*		*0*	*-*	*-*	*-*	*-*	*79.40 /ch*	*0*	*-*	*-*	*0*	*0*	*0*
.19.03 Site Restoration																	
FY15 Fiscal Year 2015																	
LS19030115 Field Staff																	
Project Manager		*0.00 wk*	*40.000 ch/wk*	*##### /ch*		*0*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Project Project Engineer		*0.00 wk*	*40.000 mh/wk*	*91.36 /mh*		*0*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Superintendent		*0.00 wk*	*40.000 mh/wk*	*96.30 /mh*		*0*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Field Engineer		*0.00 wk*	*40.000 mh/wk*	*64.20 /mh*		*0*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Health & Safety		*0.00 wk*	*40.000 mh/wk*	*83.95 /mh*		*0*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Quality Assurance / Quality Control		*0.00 wk*	*40.000 mh/wk*	*83.95 /mh*		*0*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Radiation Control Technician		*0.00 wk*	*40.000 mh/wk*	*64.20 /mh*		*0*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Project Controls - Estimating, Scheduling		*0.00 wk*	*40.000 mh/wk*	*54.49 /mh*		*0*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Time Keeper		*0.00 wk*	*40.000 mh/wk*	*39.73 /mh*		*0*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Clerk		*0.00 wk*	*40.000 mh/wk*	*14.43 /mh*		*0*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
LS19030215 Field Office																	
Office Trailer, furnished, rent per month, 50' x 12', excl. hookups		*0.00 ea*		*-*		*-*	*375.00 /ea*	*0*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Field Office Expense, office equipment rental, average		*0.00 mo*		*-*		*-*	*150.00 /mo*	*0*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Field Office Expense, office supplies, average		*0.00 mo*		*-*		*-*	*95.00 /mo*	*0*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Field Office Expense, telephone bill; avg. bill/month, incl. long dist.		*0.00 mo*		*-*		*-*	*210.00 /mo*	*0*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
Field Office Expense, field office lights & HVAC		*0.00 mo*		*-*		*-*	*110.00 /mo*	*0*	*-*	*-*	*-*	*-*	*-*	*-*	*0*	*0*	*0*
LS19030315 Site Restoration																	
Soil testing, soil density, nuclear method, ASTM D2922		*0.00 ea*		*-*		*-*	*-*	*-*	*-*	*-*	*-*	*-*	*35.00 /ea*	*0*	*0*	*0*	*0*
Soil testing, Proctor compaction, 6" modified mold		*0.00 ea*		*-*		*-*	*-*	*-*	*-*	*-*	*-*	*-*	*68.00 /ea*	*0*	*0*	*0*	*0*
Earthwork inspection technician, per day		*0.00 ea*		*-*		*-*	*-*	*-*	*-*	*-*	*-*	*-*	*210.00 /ea*	*0*	*0*	*0*	*0*
Fine grading, for roadway, base or leveling course, large area, 6,000 S.Y. or more		*0.00 sy*	*0.004 ch/sy*	*89.98 /ch*		*0*	*-*	*-*	*-*	*-*	*66.80 /ch*	*0*	*-*	*-*	*0*	*0*	*0*

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS19030315 Site Restoration																	
Excavating, bulk bank measure, 5 C.Y. capacity = 185 C.Y./hour, wheel mounted		*0.00 bcy*	*0.005 ch/bcy*	*68.51 /ch*		*0*	-	-	-	-	*103.35 /ch*	*0*	-	-	*0*	*0*	*0*
Backfill, structural, sandy clay & loam, 80 H.P. dozer, 50' haul, excludes compaction		*0.00 lcy*	*0.007 ch/lcy*	*68.51 /ch*		*0*	-	-	-	-	*47.43 /ch*	*0*	-	-	*0*	*0*	*0*
Hauling, excavated or borrow material, loose cubic yards, 1/4 mile round trip, 3.7 loads/hour, 12 C.Y. dump truck, highway haulers, excludes loading		*0.00 lcy*	*0.028 ch/lcy*	*48.02 /ch*		*0*	-	-	-	-	*62.85 /ch*	*0*	-	-	*0*	*0*	*0*
Compaction, structural, common fill, 8" lifts, sheepsfoot or wobbly wheel roller		*0.00 ecy*	*0.006 ch/ecy*	*68.51 /ch*		*0*	-	-	-	-	*125.75 /ch*	*0*	-	-	*0*	*0*	*0*
Seeding, mechanical seeding hydro or air seeding for large areas, includes lime, fertilizer and seed		*0.00 sy*	*0.001 ch/sy*	*##### /ch*		*0*	*0.16 /sy*	*0*	-	-	*69.18 /ch*	*0*	-	-	*0*	*0*	*0*
S Small Canister Underwater Loading System					**729,045**	**53,005,665**		**18,474,897**		**12,871,188**		**1,466,876**		**13,923,736**	**99,742,362**	**17,650,392**	**117,392,754**

Estimate Totals

Description	Amount	Totals	Hours	Rate	Cost Basis
Labor	53,005,665		729,044.532 hrs		
Material	18,474,897				
Subcontract	12,871,188				
Equipment	1,466,876		572.802 hrs		
Other	13,923,736				
	99,742,362	99,742,362			
Sales Tax	1,533,416			8.30000 %	C
Sales Tax on Rental Equip	121,751			8.30000 %	C
	1,655,167	101,397,529			
Construction General Req.	318,453			18.00000 %	C
	318,453	101,715,982			
FY2010 Escalation	285,579			2.00000 %	C
FY2011 Escalation	647,511			4.04000 %	C
FY2012 Escalation	1,151,384			6.12000 %	C
FY2013 Escalation	3,132,105			8.24300 %	C
FY2014 Escalation	1,258,225			10.40800 %	C
	6,474,804	108,190,786			
Site G&A on Markups	723,867			8.50000 %	O
Site G&A on Direct Costs	8,478,101			8.50000 %	C
	9,201,968	117,392,754			
Risk - Zero					C
Risk - Low					C
Risk - Low - Medium					C
Risk - Medium					C
Risk - Medium - High					C
Risk - High					C
		117,392,754			
Total		***117,392,754***			

Sludge Treatment Project

Project name	Hydraulic Loading Sysr1 July 28,2009
Labor rate table	Hanford FY09
Equipment rate table	COMM2009
Notes	Hydrulic Loading System - IPS Engr % K West Basin Min Safe 2010 to 2014 2010 Conceptual Design - Scale Testing 2011 Preliminary Design - Full Scale Prototype 2012 Final Design - Integrated Sys. Testing 2013 Construction 2014 Retrieve sludge 2015 Off River
Report format	Sorted by 'WBS Lvl 1/WBS Lvl 2/WBS Lvl 3/Year/Sch Acty' 'Detail' summary

Hydraulic Loading Sysr1

WBS Lvl 1	WBS Lvl 2	Description	Labor Man Hrs	Labor Amount	Material Amount	Sub Amount	Equip Amount	Other Amount	Total Amount	Addon Amount	Grand Total
H		**Hydraulic Loading System**									
	.01	Project Management	26,331	2,313,144					2,313,144	533,642	2,846,785
	.02	Project Support	6,516	537,143					537,143	83,177	620,320
	.03	Environmental Doc., Permitting, & Waste Acceptance	4,575	379,727					379,727	56,539	436,266
	.04	Nuclear Safety	18,144	1,712,566					1,712,566	239,482	1,952,048
	.05	Radiological Control	832	78,998					78,998	11,868	90,866
	.06	Industrial Safety	832	59,072					59,072	8,874	67,946
	.07	Quality Assurance	1,664	125,216					125,216	18,811	144,027
	.08	Safeguards & Security	1,280	72,314					72,314	9,359	81,672
	.09	Technology Development	74,880	6,853,954			1,350,000		8,203,954	1,258,502	9,462,456
	.10	Conceptual Design	12,800	1,097,216					1,097,216	130,808	1,228,024
	.11	Preliminary Design	19,200	1,645,824					1,645,824	229,786	1,875,610
	.12	Final Design	38,240	3,277,933					3,277,933	525,839	3,803,772
	.13	Engineering During Construction	25,440	2,180,717					2,180,717	396,123	2,576,839
	.14	Procurement	2,445	147,785	1,597,846	250,000			1,995,630	493,172	2,488,802
	.15	Construction	31,459	2,030,622	2,347,434	47,787	57,048	3,380	4,486,271	2,311,177	6,797,449
	.16	Start up & Testing	53,987	3,124,374					3,124,374	559,178	3,683,553
	.17	RISK						6,263,457	6,263,457	1,008,600	7,272,057
	.18	Operations and Maintenance	398,120	25,761,065	14,656,500	3,494,958	3,000	311,500	44,227,023	13,866,336	58,093,359
	.19	Deactivation & Decommissioning									
		H Hydraulic Loading System	**716,745**	**51,397,668**	**18,601,780**	**3,792,746**	**1,410,048**	**6,578,337**	**81,780,579**	**21,741,273**	**103,521,851**

Estimate Totals

Description	Amount	Totals	Hours	Rate	Cost Basis	Percent of Total
Labor	51,397,668		716,744.574 hrs			49.65%
Material	18,601,780					17.97%
Subcontract	3,792,746					3.66%
Equipment	1,410,048		3,325.422 hrs			1.36%
Other	6,578,337					6.35%
	81,780,579	81,780,579				79.00
Sales Tax	1,543,948			8.30000 %	C	1.49%
Sales Tax on Rental Equip	117,034			8.30000 %	C	0.11%
	1,660,982	83,441,561				1.60
Construction General Req.	205,718			18.00000 %	C	0.20%
	205,718	83,647,279				0.20
Subcontractor Liability Ins.	454,376			2.00000 %	C	0.44%
Subcontractor Bond	567,970			2.50000 %	C	0.55%
	1,022,346	84,669,625				0.99
Overhead / Fee / Profit	5,679,695			25.00000 %	C	5.49%
	5,679,695	90,349,320				5.49
FY2010 Escalation	277,692			2.00000 %	C	0.27%
FY2011 Escalation	620,859			4.04000 %	C	0.60%
FY2012 Escalation	1,073,159			6.12000 %	C	1.04%
FY2013 Escalation	1,950,416			8.24300 %	C	1.88%
FY2014 Escalation	1,136,311			10.40800 %	C	1.10%
	5,058,437	95,407,757				4.89
Site G&A on Markups	1,162,747			8.50000 %	O	1.12%
Site G&A on Direct Costs	6,951,349			8.50000 %	C	6.71%
	8,114,096	103,521,853				7.84
Risk - Zero					C	
Risk - Low					C	
Risk - Low - Medium					C	
Risk - Medium					C	
Risk - Medium - High					C	
Risk - High					C	
		103,521,853				
Total		***103,521,853***				

CH2MHILL

Spreadsheet Report

Hydraulic Loading Sysr1

WBS Lvl 1	WBS Lvl 2	WBS Lvl 3	Year	Description	Labor Man Hrs	Labor Amount	Material Amount	Sub Amount	Equip Amount	Other Amount	Total Amount	Addon Amount	Grand Total
H				**Hydraulic Loading System**									
	.01			Project Management									
		.01.01		**Project Management**									
			FY10	**Fiscal Year 2010**	**3,598**	**350,754**					**350,754**	**41,816**	**392,570**
			FY11	**Fiscal Year 2011**	**3,598**	**350,754**					**350,754**	**48,972**	**399,726**
			FY12	**Fiscal Year 2012**	**3,598**	**350,754**					**350,754**	**56,267**	**407,021**
			FY13	**Fiscal Year 2013**	**3,598**	**350,754**					**350,754**	**63,714**	**414,468**
				.01.01 Project Management	**14,394**	**1,403,016**					**1,403,016**	**210,769**	**1,613,785**
		.01.02		**Construction Management**									
			FY12	**Fiscal Year 2012**	**3,875**	**295,457**					**295,457**	**100,579**	**396,036**
			FY13	**Fiscal Year 2013**	**8,062**	**614,670**					**614,670**	**222,294**	**836,965**
				.01.02 Construction Management	**11,937**	**910,127**					**910,127**	**322,873**	**1,233,000**
				.01 Project Management	26,331	2,313,144					2,313,144	533,642	2,846,785
	.02			Project Support									
		.02.01		**Project/Facility Support**									
			FY10	**Fiscal Year 2010**	**900**	**74,191**					**74,191**	**8,845**	**83,036**
			FY11	**Fiscal Year 2011**	**1,872**	**154,317**					**154,317**	**21,545**	**175,863**
			FY12	**Fiscal Year 2012**	**1,872**	**154,317**					**154,317**	**24,755**	**179,073**
			FY13	**Fiscal Year 2013**	**1,872**	**154,317**					**154,317**	**28,031**	**182,349**
				.02.01 Project/Facility Support	**6,516**	**537,143**					**537,143**	**83,177**	**620,320**
				.02 Project Support	6,516	537,143					537,143	83,177	620,320
	.03			Environmental Doc., Permitting, & Waste Acceptance									
		.03.01		**Environmental Documentation**									
			FY11	**Fiscal Year 2011**	**2,535**	**210,389**					**210,389**	**29,374**	**239,763**
			FY12	**Fiscal Year 2012**	**520**	**43,150**					**43,150**	**6,922**	**50,072**
				.03.01 Environmental Documentation	**3,055**	**253,538**					**253,538**	**36,296**	**289,834**
		.03.03		**Waste Acceptance**									
			FY12	**Fiscal Year 2012**	**1,520**	**126,189**					**126,189**	**20,243**	**146,432**
				.03.03 Waste Acceptance	**1,520**	**126,189**					**126,189**	**20,243**	**146,432**
				.03 Environmental Doc., Permitting, & Waste Acceptance	4,575	379,727					379,727	56,539	436,266
	.04			Nuclear Safety									
		.04.01		**Nuclear Safety**									
			FY10	**Fiscal Year 2010**	**7,560**	**713,569**					**713,569**	**85,070**	**798,639**
			FY11	**Fiscal Year 2011**	**5,292**	**499,498**					**499,498**	**69,739**	**569,237**
			FY12	**Fiscal Year 2012**	**3,024**	**285,428**					**285,428**	**45,788**	**331,215**
			FY13	**Fiscal Year 2013**	**2,268**	**214,071**					**214,071**	**38,886**	**252,956**
				.04.01 Nuclear Safety	**18,144**	**1,712,566**					**1,712,566**	**239,482**	**1,952,048**
				.04 Nuclear Safety	18,144	1,712,566					1,712,566	239,482	1,952,048
	.05			Radiological Control									
		.05.01		**Radiological Control**									
			FY10	**Fiscal Year 2010**	**208**	**19,750**					**19,750**	**2,355**	**22,104**
			FY11	**Fiscal Year 2011**	**208**	**19,750**					**19,750**	**2,757**	**22,507**

Hydraulic Loading Sysr1

WBS Lvl 1	WBS Lvl 2	WBS Lvl 3	Year	Description	Labor Man Hrs	Labor Amount	Material Amount	Sub Amount	Equip Amount	Other Amount	Total Amount	Addon Amount	Grand Total
			FY12	Fiscal Year 2012	208	19,750					19,750	3,168	22,918
			FY13	Fiscal Year 2013	208	19,750					19,750	3,587	23,337
				.05.01 Radiological Control	832	78,998					78,998	11,868	90,866
				.05 Radiological Control	832	78,998					78,998	11,868	90,866
	.06			Industrial Safety									
		.06.01		Industrial Safety									
			FY10	Fiscal Year 2010	208	14,768					14,768	1,761	16,529
			FY11	Fiscal Year 2011	208	14,768					14,768	2,062	16,830
			FY12	Fiscal Year 2012	208	14,768					14,768	2,369	17,137
			FY13	Fiscal Year 2013	208	14,768					14,768	2,683	17,451
				.06.01 Industrial Safety	832	59,072					59,072	8,874	67,946
				.06 Industrial Safety	832	59,072					59,072	8,874	67,946
	.07			Quality Assurance									
		.07.01		Quality Assurance									
			FY10	Fiscal Year 2010	416	31,304					31,304	3,732	35,036
			FY11	Fiscal Year 2011	416	31,304					31,304	4,371	35,675
			FY12	Fiscal Year 2012	416	31,304					31,304	5,022	36,326
			FY13	Fiscal Year 2013	416	31,304					31,304	5,686	36,990
				.07.01 Quality Assurance	1,664	125,216					125,216	18,811	144,027
				.07 Quality Assurance	1,664	125,216					125,216	18,811	144,027
.08				Safeguards & Security									
	.08.01			Safeguards & Security									
			FY10	Fiscal Year 2010	640	36,157					36,157	4,311	40,467
			FY11	Fiscal Year 2011	640	36,157					36,157	5,048	41,205
				.08.01 Safeguards & Security	1,280	72,314					72,314	9,359	81,672
				.08 Safeguards & Security	1,280	72,314					72,314	9,359	81,672
.09				Technology Development									
	.09.01			Technology Development Testing									
			FY10	Fiscal Year 2010	8,320	761,550		100,000			861,550	111,012	972,563
			FY11	Fiscal Year 2011	8,320	761,550		250,000			1,011,550	161,981	1,173,531
			FY12	Fiscal Year 2012	8,320	761,550		100,000			861,550	146,508	1,008,058
				.09.01 Technology Development Testing	24,960	2,284,651		450,000			2,734,651	419,501	3,154,152
	.09.02			Technology Development Assessments									
			FY10	Fiscal Year 2010	8,320	761,550		100,000			861,550	111,012	972,563
			FY11	Fiscal Year 2011	8,320	761,550		250,000			1,011,550	161,981	1,173,531
			FY12	Fiscal Year 2012	8,320	761,550		100,000			861,550	146,508	1,008,058
				.09.02 Technology Development Assessments	24,960	2,284,651		450,000			2,734,651	419,501	3,154,152
	.09.03			Technology Maturation Plan									
			FY10	Fiscal Year 2010	8,320	761,550		100,000			861,550	111,012	972,563
			FY11	Fiscal Year 2011	8,320	761,550		250,000			1,011,550	161,981	1,173,531
			FY12	Fiscal Year 2012	8,320	761,550		100,000			861,550	146,508	1,008,058
				.09.03 Technology Maturation Plan	24,960	2,284,651		450,000			2,734,651	419,501	3,154,152
				.09 Technology Development	74,880	6,853,954		1,350,000			8,203,954	1,258,502	9,462,456
.10				Conceptual Design									

Hydraulic Loading Sysr1

WBS Lvl 1	WBS Lvl 2	WBS Lvl 3	Year	Description	Labor Man Hrs	Labor Amount	Material Amount	Sub Amount	Equip Amount	Other Amount	Total Amount	Addon Amount	Grand Total
		.10.01		**Conceptual Design**									
			FY10	**Fiscal Year 2010**	**12,800**	**1,097,216**					**1,097,216**	**130,808**	**1,228,024**
				.10.01 Conceptual Design	**12,800**	**1,097,216**					**1,097,216**	**130,808**	**1,228,024**
				.10 Conceptual Design	12,800	1,097,216					1,097,216	130,808	1,228,024
	.11			Preliminary Design									
		.11.01		**Preliminary Design**									
			FY11	**Fiscal Year 2011**	**19,200**	**1,645,824**					**1,645,824**	**229,786**	**1,875,610**
				.11.01 Preliminary Design	**19,200**	**1,645,824**					**1,645,824**	**229,786**	**1,875,610**
				.11 Preliminary Design	19,200	1,645,824					1,645,824	229,786	1,875,610
	.12			Final Design									
		.12.01		**Final Design**									
			FY12	**Fiscal Year 2012**	**38,240**	**3,277,933**					**3,277,933**	**525,839**	**3,803,772**
				.12.01 Final Design	**38,240**	**3,277,933**					**3,277,933**	**525,839**	**3,803,772**
				.12 Final Design	38,240	3,277,933					3,277,933	525,839	3,803,772
	.13			Engineering During Construction									
		.13.01		**Engineering During Construction**									
			FY13	**Fiscal Year 2013**	**25,440**	**2,180,717**					**2,180,717**	**396,123**	**2,576,839**
				.13.01 Engineering During Construction	**25,440**	**2,180,717**					**2,180,717**	**396,123**	**2,576,839**
				.13 Engineering During Construction	25,440	2,180,717					2,180,717	396,123	2,576,839
	.14			Procurement									
		.14.01		**Procurement Support**									
			FY12	**Fiscal Year 2012**	**1,560**	**91,926**					**91,926**	**14,747**	**106,672**
			FY13	**Fiscal Year 2013**	**600**	**35,356**					**35,356**	**6,422**	**41,778**
				.14.01 Procurement Support	**2,160**	**127,282**					**127,282**	**21,169**	**148,450**
		.14.02		**Equipment Procurement**									
			FY13	**Fiscal Year 2013**	**285**	**20,503**	**1,597,846**	**250,000**			**1,868,349**	**472,003**	**2,340,351**
				.14.02 Equipment Procurement	**285**	**20,503**	**1,597,846**	**250,000**			**1,868,349**	**472,003**	**2,340,351**
				.14 Procurement	2,445	147,785	1,597,846	250,000			1,995,630	493,172	2,488,802
	.15			Construction									
		.15.01		**New Construction**									
			FY13	**Fiscal Year 2013**	**28,617**	**1,868,342**	**2,281,531**	**8,093**	**52,481**	**3,380**	**4,213,826**	**2,202,234**	**6,416,061**
				.15.01 New Construction	**28,617**	**1,868,342**	**2,281,531**	**8,093**	**52,481**	**3,380**	**4,213,826**	**2,202,234**	**6,416,061**
		.15.03		**Bldg. Modifications**									
			FY13	**Fiscal Year 2013**	**2,842**	**162,280**	**65,903**	**39,695**	**4,567**		**272,445**	**108,943**	**381,388**
				.15.03 Bldg. Modifications	**2,842**	**162,280**	**65,903**	**39,695**	**4,567**		**272,445**	**108,943**	**381,388**
				.15 Construction	31,459	2,030,622	2,347,434	47,787	57,048	3,380	4,486,271	2,311,177	6,797,449
	.16			Start up & Testing									
		.16.01		**Start up & Testing**									
			FY13	**Fiscal Year 2013**	**240**	**19,296**					**19,296**	**3,505**	**22,801**
				.16.01 Start up & Testing	**240**	**19,296**					**19,296**	**3,505**	**22,801**
		.16.02		**Procedure Development**									
			FY12	**Fiscal Year 2012**	**7,197**	**393,665**					**393,665**	**63,151**	**456,816**
			FY13	**Fiscal Year 2013**	**14,914**	**827,404**					**827,404**	**150,296**	**977,701**
				.16.02 Procedure Development	**22,110**	**1,221,069**					**1,221,069**	**213,447**	**1,434,516**
		.16.03		**Readiness Activities / Planning**									

Hydraulic Loading Sysr1

WBS Lvl 1	WBS Lvl 2	WBS Lvl 3	Year	Description	Labor Man Hrs	Labor Amount	Material Amount	Sub Amount	Equip Amount	Other Amount	Total Amount	Addon Amount	Grand Total
			FY13	Fiscal Year 2013	28,597	1,658,324					1,658,324	301,231	1,959,555
				.16.03 Readiness Activities / Planning	28,597	1,658,324					1,658,324	301,231	1,959,555
		.16.04		System Test									
			FY13	Fiscal Year 2013	1,600	130,970					130,970	23,790	154,760
				.16.04 System Test	1,600	130,970					130,970	23,790	154,760
		.16.05		Start Up									
			FY13	Fiscal Year 2013	1,440	94,715					94,715	17,205	111,920
				.16.05 Start Up	1,440	94,715					94,715	17,205	111,920
				.16 Start up & Testing	53,987	3,124,374					3,124,374	559,178	3,683,553
	.17			RISK									
		.17.01		RISK									
			FY10	Fiscal Year 2010						738,354	738,354	88,025	826,379
			FY11	Fiscal Year 2011						1,146,485	1,146,485	160,070	1,306,555
			FY12	Fiscal Year 2012						1,642,084	1,642,084	263,420	1,905,504
			FY13	Fiscal Year 2013						2,736,534	2,736,534	497,086	3,233,620
				.17.01 RISK						6,263,457	6,263,457	1,008,600	7,272,057
				.17 RISK						6,263,457	6,263,457	1,008,600	7,272,057
	.18			Operations and Maintenance									
		.18.01		Operations									
			FY14	Fiscal Year 2014	43,684	2,560,767					2,560,767	520,599	3,081,366
			FY15	Fiscal Year 2015	6,721	393,964					393,964	39,088	433,052
				.18.01 Operations	50,405	2,954,731					2,954,731	559,687	3,514,418
		.18.02		Transportation									
			FY14	Fiscal Year 2014	2,080			128,491			128,491	64,027	192,518
			FY15	Fiscal Year 2015	320			19,768			19,768	7,793	27,561
				.18.02 Transportation	2,400			148,259			148,259	71,820	220,078
		.18.03		Maintenance									
			FY10	Fiscal Year 2010	68,823	4,561,267	2,931,000	669,340		62,300	8,223,907	2,304,147	10,528,054
			FY11	Fiscal Year 2011	68,823	4,561,267	2,931,000	669,340		62,300	8,223,907	2,471,915	10,695,822
			FY12	Fiscal Year 2012	68,823	4,561,267	2,931,000	669,340		62,300	8,223,907	2,642,972	10,866,879
			FY13	Fiscal Year 2013	68,823	4,561,267	2,931,000	669,340		62,300	8,223,907	2,817,566	11,041,472
			FY14	Fiscal Year 2014	70,023	4,561,267	2,932,500	669,340	3,000	62,300	8,228,407	2,998,229	11,226,636
				.18.03 Maintenance	345,315	22,806,333	14,656,500	3,346,699	3,000	311,500	41,124,033	13,234,829	54,358,862
				.18 Operations and Maintenance	398,120	25,761,065	14,656,500	3,494,958	3,000	311,500	44,227,023	13,866,336	58,093,359
	.19			Deactivation & Decommissioning									
		.19.01		Deactivation & Decommissioning									
			FY14	Fiscal Year 2014									
		.19.02		Demolition									
			FY15	Fiscal Year 2015									
		.19.03		Site Restoration									
			FY15	Fiscal Year 2015									
				H Hydraulic Loading System	**716,745**	**51,397,668**	**18,601,780**	**3,792,746**	**1,410,048**	**6,578,337**	**81,780,579**	**21,741,273**	**103,521,851**

CH2MHILL

Spreadsheet Report

Hydraulic Loading Sysr1

WBS Lvl 1	WBS Lvl 2	WBS Lvl 3	Year	Sch Acty	Description	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
H					**Hydraulic Loading System**																	
	.01				Project Management																	
		.01.01			**Project Management**																	
			FY10		**Fiscal Year 2010**																	
				LS01010110	Project Management					3,598	350,754									350,754	41,816	392,570
					FY10 Fiscal Year 2010					**3,598**	**350,754**									**350,754**	**41,816**	**392,570**
			FY11		**Fiscal Year 2011**																	
				LS01010111	Project Management					3,598	350,754									350,754	48,972	399,726
					FY11 Fiscal Year 2011					**3,598**	**350,754**									**350,754**	**48,972**	**399,726**
			FY12		**Fiscal Year 2012**																	
				LS01010112	Project Management					3,598	350,754									350,754	56,267	407,021
					FY12 Fiscal Year 2012					**3,598**	**350,754**									**350,754**	**56,267**	**407,021**
			FY13		**Fiscal Year 2013**																	
				LS01010113	Project Management					3,598	350,754									350,754	63,714	414,468
					FY13 Fiscal Year 2013					**3,598**	**350,754**									**350,754**	**63,714**	**414,468**
					.01.01 Project Management					**14,394**	**1,403,016**									**1,403,016**	**210,769**	**1,613,785**
		.01.02			**Construction Management**																	
			FY12		**Fiscal Year 2012**																	
				LS01010212	Construction Management					3,875	295,457									295,457	100,579	396,036
					FY12 Fiscal Year 2012					**3,875**	**295,457**									**295,457**	**100,579**	**396,036**
			FY13		**Fiscal Year 2013**																	
				LS01010213	Construction Management					8,062	614,670									614,670	222,294	836,965
					FY13 Fiscal Year 2013					**8,062**	**614,670**									**614,670**	**222,294**	**836,965**
					.01.02 Construction Management					**11,937**	**910,127**									**910,127**	**322,873**	**1,233,000**
					.01 Project Management					26,331	2,313,144									2,313,144	533,642	2,846,785
	.02				Project Support																	
		.02.01			**Project/Facility Support**																	
			FY10		**Fiscal Year 2010**																	
				LS02010110	Project/Facility Support					900	74,191									74,191	8,845	83,036
					FY10 Fiscal Year 2010					**900**	**74,191**									**74,191**	**8,845**	**83,036**
			FY11		**Fiscal Year 2011**																	
				LS02010111	Project/Facility Support					1,872	154,317									154,317	21,545	175,863
					FY11 Fiscal Year 2011					**1,872**	**154,317**									**154,317**	**21,545**	**175,863**
			FY12		**Fiscal Year 2012**																	
				LS02010112	Project/Facility Support					1,872	154,317									154,317	24,755	179,073
					FY12 Fiscal Year 2012					**1,872**	**154,317**									**154,317**	**24,755**	**179,073**
			FY13		**Fiscal Year 2013**																	
				LS02010113	Project/Facility Support					1,872	154,317									154,317	28,031	182,349
					FY13 Fiscal Year 2013					**1,872**	**154,317**									**154,317**	**28,031**	**182,349**
					.02.01 Project/Facility Support					**6,516**	**537,143**									**537,143**	**83,177**	**620,320**
					.02 Project Support					6,516	537,143									537,143	83,177	620,320
	.03				Environmental Doc., Permitting, & Waste Acceptance																	
		.03.01			**Environmental Documentation**																	
			FY11		**Fiscal Year 2011**																	
				LS03010111	CERCLA Documentation					2,015	167,239									167,239	23,350	190,589
				LS03010211	Review Support					520	43,150									43,150	6,024	49,174
					FY11 Fiscal Year 2011					**2,535**	**210,389**									**210,389**	**29,374**	**239,763**
			FY12		**Fiscal Year 2012**																	
				LS03010212	Review Support					520	43,150									43,150	6,922	50,072
					FY12 Fiscal Year 2012					**520**	**43,150**									**43,150**	**6,922**	**50,072**
					.03.01 Environmental Documentation					**3,055**	**253,538**									**253,538**	**36,296**	**289,834**
		.03.03			**Waste Acceptance**																	
			FY12		**Fiscal Year 2012**																	
				LS03030112	Waste Acceptance					1,520	126,189									126,189	20,243	146,432
					FY12 Fiscal Year 2012					**1,520**	**126,189**									**126,189**	**20,243**	**146,432**
					.03.03 Waste Acceptance					**1,520**	**126,189**									**126,189**	**20,243**	**146,432**
					.03 Environmental Doc., Permitting, & Waste Acceptance					4,575	379,727									379,727	56,539	436,266
	.04				Nuclear Safety																	
		.04.01			**Nuclear Safety**																	
			FY10		**Fiscal Year 2010**																	
				LS04010110	Hazard Analysis					760	72,162									72,162	8,603	80,765
				LS04010210	Accident Analysis					1,440	136,728									136,728	16,300	153,028
				LS04010310	Thermal/Gas Analysis Update(HNF-10858, SNF-18135,HNF-12563)					520	49,374									49,374	5,886	55,260
				LS04010410	GAP Analysis					320	26,131									26,131	3,115	29,247
				LS04010510	Control Definitions					800	75,960									75,960	9,056	85,016
				LS04010610	Conceptual Safety Design Report					1,440	136,728									136,728	16,300	153,028
				LS04010710	Criticality Safety Analysis					480	45,576									45,576	5,433	51,009
				LS04010910	Fire Hazard Analysis					240	22,788									22,788	2,717	25,505
				LS04011010	EPHA					1,560	148,122									148,122	17,659	165,781
					FY10 Fiscal Year 2010					**7,560**	**713,569**									**713,569**	**85,070**	**798,639**
			FY11		**Fiscal Year 2011**																	
				LS04010111	Hazard Analysis					532	50,513									50,513	7,053	57,566
				LS04010211	Accident Analysis					1,008	95,710									95,710	13,363	109,072
				LS04010311	Thermal/Gas Analysis Update(HNF-10858, SNF-18135,HNF-12563)					364	34,562									34,562	4,825	39,387
				LS04010411	GAP Analysis					224	18,292									18,292	2,554	20,846

WBS Lvl 1	WBS Lvl 2	WBS Lvl 3	Year	Sch Acty	Description	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
				LS04010511	Control Definitions					560	53,172									53,172	7,424	60,596
				LS04010611	Preliminary Safety Design Report					1,008	95,710									95,710	13,363	109,072
				LS04010711	Criticality Safety Analysis					336	31,903									31,903	4,454	36,357
				LS04010911	Fire Hazard Analysis					168	15,952									15,952	2,227	18,179
				LS04011011	EPHA					1,092	103,685									103,685	14,476	118,162
					FY11 Fiscal Year 2011					**5,292**	**499,498**									**499,498**	**69,739**	**569,237**
			FY12		**Fiscal Year 2012**																	
				LS04010112	Hazard Analysis					304	28,865									28,865	4,630	33,495
				LS04010212	Accident Analysis					576	54,691									54,691	8,773	63,465
				LS04010312	Thermal/Gas Analysis Update(HNF-10858, SNF-18135,HNF-12563)					208	19,750									19,750	3,168	22,918
				LS04010412	GAP Analysis					128	10,452									10,452	1,677	12,129
				LS04010512	Control Definitions					320	30,384									30,384	4,874	35,258
				LS04010612	Preliminary Safety Design Report					576	54,691									54,691	8,773	63,465
				LS04010712	Criticality Safety Analysis					192	18,230									18,230	2,924	21,155
				LS04010912	Fire Hazard Analysis					96	9,115									9,115	1,462	10,577
				LS04011012	EPHA					624	59,249									59,249	9,505	68,753
					FY12 Fiscal Year 2012					**3,024**	**285,428**									**285,428**	**45,788**	**331,215**
			FY13		**Fiscal Year 2013**																	
				LS04010113	Hazard Analysis					228	21,649									21,649	3,932	25,581
				LS04010213	Accident Analysis					432	41,018									41,018	7,451	48,469
				LS04010313	Thermal/Gas Analysis Update(HNF-10858, SNF-18135,HNF-12563)					156	14,812									14,812	2,691	17,503
				LS04010413	GAP Analysis					96	7,839									7,839	1,424	9,263
				LS04010513	Control Definitions					240	22,788									22,788	4,139	26,927
				LS04010613	Conceptual Safety Design Report					432	41,018									41,018	7,451	48,469
				LS04010713	Criticality Safety Analysis					144	13,673									13,673	2,484	16,156
				LS04010913	Fire Hazard Analysis					72	6,836									6,836	1,242	8,078
				LS04011013	EPHA					468	44,437									44,437	8,072	52,508
					FY13 Fiscal Year 2013					**2,268**	**214,071**									**214,071**	**38,886**	**252,956**
					.04.01 Nuclear Safety					**18,144**	**1,712,566**									**1,712,566**	**239,482**	**1,952,048**
					.04 Nuclear Safety					18,144	1,712,566									1,712,566	239,482	1,952,048
	.05				Radiological Control																	
		.05.01			**Radiological Control**																	
			FY10		**Fiscal Year 2010**																	
				LS05050110	Radiological Control					208	19,750									19,750	2,355	22,104
					FY10 Fiscal Year 2010					**208**	**19,750**									**19,750**	**2,355**	**22,104**
			FY11		**Fiscal Year 2011**																	
				LS05050111	Radiological Control					208	19,750									19,750	2,757	22,507
					FY11 Fiscal Year 2011					**208**	**19,750**									**19,750**	**2,757**	**22,507**
			FY12		**Fiscal Year 2012**																	
				LS05050112	Radiological Control					208	19,750									19,750	3,168	22,918
					FY12 Fiscal Year 2012					**208**	**19,750**									**19,750**	**3,168**	**22,918**
			FY13		**Fiscal Year 2013**																	
				LS05050113	Radiological Control					208	19,750									19,750	3,587	23,337
					FY13 Fiscal Year 2013					**208**	**19,750**									**19,750**	**3,587**	**23,337**
					.05.01 Radiological Control					**832**	**78,998**									**78,998**	**11,868**	**90,866**
					.05 Radiological Control					832	78,998									78,998	11,868	90,866
	.06				Industrial Safety																	
		.06.01			**Industrial Safety**																	
			FY10		**Fiscal Year 2010**																	
				LS06060110	Industrial Safety					208	14,768									14,768	1,761	16,529
					FY10 Fiscal Year 2010					**208**	**14,768**									**14,768**	**1,761**	**16,529**
			FY11		**Fiscal Year 2011**																	
				LS06060111	Industrial Safety					208	14,768									14,768	2,062	16,830
					FY11 Fiscal Year 2011					**208**	**14,768**									**14,768**	**2,062**	**16,830**
			FY12		**Fiscal Year 2012**																	
				LS06060112	Industrial Safety					208	14,768									14,768	2,369	17,137
					FY12 Fiscal Year 2012					**208**	**14,768**									**14,768**	**2,369**	**17,137**
			FY13		**Fiscal Year 2013**																	
				LS06060113	Industrial Safety					208	14,768									14,768	2,683	17,451
					FY13 Fiscal Year 2013					**208**	**14,768**									**14,768**	**2,683**	**17,451**
					.06.01 Industrial Safety					**832**	**59,072**									**59,072**	**8,874**	**67,946**
					.06 Industrial Safety					832	59,072									59,072	8,874	67,946
	.07				Quality Assurance																	
		.07.01			**Quality Assurance**																	
			FY10		**Fiscal Year 2010**																	
				LS07070110	Quality Assurance					416	31,304									31,304	3,732	35,036
					FY10 Fiscal Year 2010					**416**	**31,304**									**31,304**	**3,732**	**35,036**
			FY11		**Fiscal Year 2011**																	
				LS07070111	Quality Assurance					416	31,304									31,304	4,371	35,675
					FY11 Fiscal Year 2011					**416**	**31,304**									**31,304**	**4,371**	**35,675**
			FY12		**Fiscal Year 2012**																	
				LS07070112	Quality Assurance					416	31,304									31,304	5,022	36,326
					FY12 Fiscal Year 2012					**416**	**31,304**									**31,304**	**5,022**	**36,326**
			FY13		**Fiscal Year 2013**																	
				LS07070113	Quality Assurance					416	31,304									31,304	5,686	36,990
					FY13 Fiscal Year 2013					**416**	**31,304**									**31,304**	**5,686**	**36,990**
					.07.01 Quality Assurance					**1,664**	**125,216**									**125,216**	**18,811**	**144,027**

WBS Lvl 1	WBS Lvl 2	WBS Lvl 3	Year	Sch Acty	Description	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
					.07 Quality Assurance					1,664	125,216									125,216	18,811	144,027
	.08				Safeguards & Security																	
		.08.01			**Safeguards & Security**																	
			FY10		**Fiscal Year 2010**																	
				LS08080110	Design Review Of Conceptual Design					640	36,157									36,157	4,311	40,467
					FY10 Fiscal Year 2010					**640**	**36,157**									**36,157**	**4,311**	**40,467**
			FY11		**Fiscal Year 2011**																	
				LS08080111	Vulnerability Assessment					640	36,157									36,157	5,048	41,205
					FY11 Fiscal Year 2011					**640**	**36,157**									**36,157**	**5,048**	**41,205**
					.08.01 Safeguards & Security					**1,280**	**72,314**									**72,314**	**9,359**	**81,672**
					.08 Safeguards & Security					1,280	72,314									72,314	9,359	81,672
	.09				Technology Development																	
		.09.01			**Technology Development Testing**																	
			FY10		**Fiscal Year 2010**																	
				LS09090110	Componet/Scale Testing TRL 3					8,320	761,550						100,000			861,550	111,012	972,563
					FY10 Fiscal Year 2010					**8,320**	**761,550**						**100,000**			**861,550**	**111,012**	**972,563**
			FY11		**Fiscal Year 2011**																	
				LS09090111	Engineering Scale TRL 5					8,320	761,550						250,000			1,011,550	161,981	1,173,531
					FY11 Fiscal Year 2011					**8,320**	**761,550**						**250,000**			**1,011,550**	**161,981**	**1,173,531**
			FY12		**Fiscal Year 2012**																	
				LS09090112	Full Scale TRL 7					8,320	761,550						100,000			861,550	146,508	1,008,058
					FY12 Fiscal Year 2012					**8,320**	**761,550**						**100,000**			**861,550**	**146,508**	**1,008,058**
					.09.01 Technology Development Testing					**24,960**	**2,284,651**						**450,000**			**2,734,651**	**419,501**	**3,154,152**
		.09.02			**Technology Development Assessments**																	
			FY10		**Fiscal Year 2010**																	
				LS09090210	Componet/Scale Testing TRL 3					8,320	761,550						100,000			861,550	111,012	972,563
					FY10 Fiscal Year 2010					**8,320**	**761,550**						**100,000**			**861,550**	**111,012**	**972,563**
			FY11		**Fiscal Year 2011**																	
				LS09090211	Engineering Scale TRL 5					8,320	761,550						250,000			1,011,550	161,981	1,173,531
					FY11 Fiscal Year 2011					**8,320**	**761,550**						**250,000**			**1,011,550**	**161,981**	**1,173,531**
			FY12		**Fiscal Year 2012**																	
				LS09090212	Full Scale TRL 7					8,320	761,550						100,000			861,550	146,508	1,008,058
					FY12 Fiscal Year 2012					**8,320**	**761,550**						**100,000**			**861,550**	**146,508**	**1,008,058**
					.09.02 Technology Development Assessments					**24,960**	**2,284,651**						**450,000**			**2,734,651**	**419,501**	**3,154,152**
		.09.03			**Technology Maturation Plan**																	
			FY10		**Fiscal Year 2010**																	
				LS09090310	Componet/Scale Testing TRL 3					8,320	761,550						100,000			861,550	111,012	972,563
					FY10 Fiscal Year 2010					**8,320**	**761,550**						**100,000**			**861,550**	**111,012**	**972,563**
			FY11		**Fiscal Year 2011**																	
				LS09090311	Engineering Scale TRL 5					8,320	761,550						250,000			1,011,550	161,981	1,173,531
					FY11 Fiscal Year 2011					**8,320**	**761,550**						**250,000**			**1,011,550**	**161,981**	**1,173,531**
			FY12		**Fiscal Year 2012**																	
				LS09090312	Full Scale TRL 7					8,320	761,550						100,000			861,550	146,508	1,008,058
					FY12 Fiscal Year 2012					**8,320**	**761,550**						**100,000**			**861,550**	**146,508**	**1,008,058**
					.09.03 Technology Maturation Plan					**24,960**	**2,284,651**						**450,000**			**2,734,651**	**419,501**	**3,154,152**
					.09 Technology Development					74,880	6,853,954						1,350,000			8,203,954	1,258,502	9,462,456
	.10				Conceptual Design																	
		.10.01			**Conceptual Design**																	
			FY10		**Fiscal Year 2010**																	
				LS10100110	Conceptual Design					12,800	1,097,216									1,097,216	130,808	1,228,024
					FY10 Fiscal Year 2010					**12,800**	**1,097,216**									**1,097,216**	**130,808**	**1,228,024**
					.10.01 Conceptual Design					**12,800**	**1,097,216**									**1,097,216**	**130,808**	**1,228,024**
					.10 Conceptual Design					12,800	1,097,216									1,097,216	130,808	1,228,024
	.11				Preliminary Design																	
		.11.01			**Preliminary Design**																	
			FY11		**Fiscal Year 2011**																	
				LS11110111	Preliminary Design					19,200	1,645,824									1,645,824	229,786	1,875,610
					FY11 Fiscal Year 2011					**19,200**	**1,645,824**									**1,645,824**	**229,786**	**1,875,610**
					.11.01 Preliminary Design					**19,200**	**1,645,824**									**1,645,824**	**229,786**	**1,875,610**
					.11 Preliminary Design					19,200	1,645,824									1,645,824	229,786	1,875,610
	.12				Final Design																	
		.12.01			**Final Design**																	
			FY12		**Fiscal Year 2012**																	
				LS12120112	Final Design					38,240	3,277,933									3,277,933	525,839	3,803,772
					FY12 Fiscal Year 2012					**38,240**	**3,277,933**									**3,277,933**	**525,839**	**3,803,772**
					.12.01 Final Design					**38,240**	**3,277,933**									**3,277,933**	**525,839**	**3,803,772**
					.12 Final Design					38,240	3,277,933									3,277,933	525,839	3,803,772
	.13				Engineering During Construction																	
		.13.01			**Engineering During Construction**																	
			FY13		**Fiscal Year 2013**																	
				LS13130113	Engineering During Construction					25,440	2,180,717									2,180,717	396,123	2,576,839
					FY13 Fiscal Year 2013					**25,440**	**2,180,717**									**2,180,717**	**396,123**	**2,576,839**
					.13.01 Engineering During Construction					**25,440**	**2,180,717**									**2,180,717**	**396,123**	**2,576,839**
					.13 Engineering During Construction					25,440	2,180,717									2,180,717	396,123	2,576,839
	.14				Procurement																	
		.14.01			**Procurement Support**																	
			FY12		**Fiscal Year 2012**																	
				LS14140112	Procurement Support					1,560	91,926									91,926	14,747	106,672
					FY12 Fiscal Year 2012					**1,560**	**91,926**									**91,926**	**14,747**	**106,672**
			FY13		**Fiscal Year 2013**																	

WBS Lvl 1	WBS Lvl 2	WBS Lvl 3	Year	Sch Acty	Description	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
				LS14140113	Procurement Support					600	35,356									35,356	6,422	41,778
					FY13 Fiscal Year 2013					**600**	**35,356**									**35,356**	**6,422**	**41,778**
					.14.01 Procurement Support					**2,160**	**127,282**									**127,282**	**21,169**	**148,450**
		.14.02			**Equipment Procurement**																	
			FY13		**Fiscal Year 2013**																	
				LS14020113	Equipment Procurement					285	20,503		1,597,846		250,000					1,868,349	472,003	2,340,351
					FY13 Fiscal Year 2013					**285**	**20,503**		**1,597,846**		**250,000**					**1,868,349**	**472,003**	**2,340,351**
					.14.02 Equipment Procurement					**285**	**20,503**		**1,597,846**		**250,000**					**1,868,349**	**472,003**	**2,340,351**
					.14 Procurement					2,445	147,785		1,597,846		250,000					1,995,630	493,172	2,488,802
	.15				Construction																	
		.15.01			**New Construction**																	
			FY13		**Fiscal Year 2013**																	
				LS15010113	Field Staff					18,800	1,305,252									1,305,252	622,146	1,927,398
				LS15010213	Field Office & Supplies								17,785		4,093					21,878	11,904	33,782
				LS15010313	Demolition & Bldg Seperation					721	34,523				4,000		12,137		115	50,776	25,210	75,985
				LS15010413	Earthwork					23	1,098						1,851		656	3,606	1,872	5,478
				LS15010513	Concrete Work					1,627	76,176		53,546				1,811		2,354	133,888	68,412	202,299
				LS15010613	Truck Scale					374	18,599									18,599	8,865	27,464
				LS15010713	Scale Access Pit					100	5,588		7,190				1,231			14,009	7,376	21,386
				LS15010813	Super Structure					2,698	151,520		131,477				21,836			304,833	158,023	462,855
				LS15010913	HVAC					1,356	94,811		1,533,484				462			1,628,757	903,661	2,532,418
				LS15011013	Electrical					1,280	75,718		62,299				1,409			139,426	71,745	211,171
				LS15011113	Site work					122	5,393		18,948				3,775			28,116	15,287	43,403
				LS15011213	Doors					138	7,326		62,973				2,673			72,971	40,230	113,202
				LS15011313	Transfer System					360	25,852		229,881				788			256,531	141,421	397,953
				LS15011413	Transfer Berm & Containment					180	8,577		7,215				548		253	16,594	8,554	25,147
				LS15011513	Bridge Crane, Hoist, Trolly					125	6,674		2,530				596			9,799	4,930	14,730
				LS15011613	Mechanical					713	51,235		154,194				3,364			208,792	112,598	321,390
					FY13 Fiscal Year 2013					**28,617**	**1,868,342**		**2,281,531**		**8,093**		**52,481**		**3,380**	**4,213,826**	**2,202,234**	**6,416,061**
					.15.01 New Construction					**28,617**	**1,868,342**		**2,281,531**		**8,093**		**52,481**		**3,380**	**4,213,826**	**2,202,234**	**6,416,061**
		.15.03			**Bldg. Modifications**																	
			FY13		**Fiscal Year 2013**																	
				LS15030313	Demolition & Bldg Seperation					375	20,236		5,405				1,923			27,563	10,576	38,140
				LS15030413	Mechanical					1,407	78,244		37,435				2,644			118,324	46,118	164,442
				LS15030513	Electrical					1,060	63,800		23,063							86,863	33,328	120,191
				LS15030613	PPE										39,695					39,695	18,920	58,615
					FY13 Fiscal Year 2013					**2,842**	**162,280**		**65,903**		**39,695**		**4,567**			**272,445**	**108,943**	**381,388**
					.15.03 Bldg. Modifications					**2,842**	**162,280**		**65,903**		**39,695**		**4,567**			**272,445**	**108,943**	**381,388**
					.15 Construction					31,459	2,030,622		2,347,434		47,787		57,048		3,380	4,486,271	2,311,177	6,797,449
	.16				Start up & Testing																	
		.16.01			**Start up & Testing**																	
			FY13		**Fiscal Year 2013**																	
				LS16160113	CORAMI Evalation					240	19,296									19,296	3,505	22,801
					FY13 Fiscal Year 2013					**240**	**19,296**									**19,296**	**3,505**	**22,801**
					.16.01 Start up & Testing					**240**	**19,296**									**19,296**	**3,505**	**22,801**
		.16.02			**Procedure Development**																	
			FY12		**Fiscal Year 2012**																	
				LS16020412	NCO Support Prior to ORR					7,197	393,665									393,665	63,151	456,816
					FY12 Fiscal Year 2012					**7,197**	**393,665**									**393,665**	**63,151**	**456,816**
			FY13		**Fiscal Year 2013**																	
				LS16020413	NCO Support during ORR					14,394	787,330									787,330	143,017	930,347
				LS16160213	Procedure Development					520	40,074									40,074	7,279	47,354
					FY13 Fiscal Year 2013					**14,914**	**827,404**									**827,404**	**150,296**	**977,701**
					.16.02 Procedure Development					**22,110**	**1,221,069**									**1,221,069**	**213,447**	**1,434,516**
		.16.03			**Readiness Activities / Planning**																	
			FY13		**Fiscal Year 2013**																	
				LS16030113	Crew Training and ORR Preparations					27,877	1,599,697									1,599,697	290,582	1,890,278
				LS16160313	Readiness Activities / Planning					720	58,627									58,627	10,650	69,277
					FY13 Fiscal Year 2013					**28,597**	**1,658,324**									**1,658,324**	**301,231**	**1,959,555**
					.16.03 Readiness Activities / Planning					**28,597**	**1,658,324**									**1,658,324**	**301,231**	**1,959,555**
		.16.04			**System Test**																	
			FY13		**Fiscal Year 2013**																	
				LS16160413	System Test					1,600	130,970									130,970	23,790	154,760
					FY13 Fiscal Year 2013					**1,600**	**130,970**									**130,970**	**23,790**	**154,760**
					.16.04 System Test					**1,600**	**130,970**									**130,970**	**23,790**	**154,760**
		.16.05			**Start Up**																	
			FY13		**Fiscal Year 2013**																	
				LS16160513	Start Up					1,440	94,715									94,715	17,205	111,920
					FY13 Fiscal Year 2013					**1,440**	**94,715**									**94,715**	**17,205**	**111,920**
					.16.05 Start Up					**1,440**	**94,715**									**94,715**	**17,205**	**111,920**
					.16 Start up & Testing					53,987	3,124,374									3,124,374	559,178	3,683,553
	.17				RISK																	
		.17.01			**RISK**																	
			FY10		**Fiscal Year 2010**																	
				LS17170110	RISK															738,354	88,025	826,379
					FY10 Fiscal Year 2010															**738,354**	**88,025**	**826,379**
			FY11		**Fiscal Year 2011**																	
				LS17170111	RISK															1,146,485	160,070	1,306,555
					FY11 Fiscal Year 2011															**1,146,485**	**160,070**	**1,306,555**
			FY12		**Fiscal Year 2012**																	

WBS Lvl 1	WBS Lvl 2	WBS Lvl 3	Year	Sch Acty	Description	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
				LS17170112	RISK														1,642,084	1,642,084	263,420	1,905,504
					FY12 Fiscal Year 2012														**1,642,084**	**1,642,084**	**263,420**	**1,905,504**
			FY13		**Fiscal Year 2013**																	
				LS17170113	RISK														2,736,534	2,736,534	497,086	3,233,620
					FY13 Fiscal Year 2013														**2,736,534**	**2,736,534**	**497,086**	**3,233,620**
					.17.01 RISK														**6,263,457**	**6,263,457**	**1,008,600**	**7,272,057**
					.17 RISK														6,263,457	6,263,457	1,008,600	7,272,057
	.18				Operations and Maintenance																	
		.18.01			**Operations**																	
			FY14		**Fiscal Year 2014**																	
				LS18010114	XAGO operation & STSC Loading					27,877	1,599,697									1,599,697	325,215	1,924,912
				LS18010314	STSC Unloading @ Tplant					15,808	961,070									961,070	195,384	1,156,454
					FY14 Fiscal Year 2014					**43,684**	**2,560,767**									**2,560,767**	**520,599**	**3,081,366**
			FY15		**Fiscal Year 2015**																	
				LS18010115	XAGO operation & STSC Loading					4,289	246,107									246,107	24,418	270,525
				LS18010314	STSC Unloading @ Tplant					2,432	147,857									147,857	14,670	162,527
					FY15 Fiscal Year 2015					**6,721**	**393,964**									**393,964**	**39,088**	**433,052**
					.18.01 Operations					**50,405**	**2,954,731**									**2,954,731**	**559,687**	**3,514,418**
		.18.02			**Transportation**																	
			FY14		**Fiscal Year 2014**																	
				LS18020114	Transport					2,080					128,491					128,491	64,027	192,518
					FY14 Fiscal Year 2014					**2,080**					**128,491**					**128,491**	**64,027**	**192,518**
			FY15		**Fiscal Year 2015**																	
				LS18020115	Transport					320					19,768					19,768	7,793	27,561
					FY15 Fiscal Year 2015					**320**					**19,768**					**19,768**	**7,793**	**27,561**
					.18.02 Transportation					**2,400**					**148,259**					**148,259**	**71,820**	**220,078**
		.18.03			**Maintenance**																	
			FY10		**Fiscal Year 2010**																	
				LS18030210	K West Basin Min Safe					68,823	4,561,267		2,931,000		669,340				62,300	8,223,907	2,304,147	10,528,054
					FY10 Fiscal Year 2010					**68,823**	**4,561,267**		**2,931,000**		**669,340**				**62,300**	**8,223,907**	**2,304,147**	**10,528,054**
			FY11		**Fiscal Year 2011**																	
				LS18030211	K West Basin Min Safe					68,823	4,561,267		2,931,000		669,340				62,300	8,223,907	2,471,915	10,695,822
					FY11 Fiscal Year 2011					**68,823**	**4,561,267**		**2,931,000**		**669,340**				**62,300**	**8,223,907**	**2,471,915**	**10,695,822**
			FY12		**Fiscal Year 2012**																	
				LS18030212	K West Basin Min Safe					68,823	4,561,267		2,931,000		669,340				62,300	8,223,907	2,642,972	10,866,879
					FY12 Fiscal Year 2012					**68,823**	**4,561,267**		**2,931,000**		**669,340**				**62,300**	**8,223,907**	**2,642,972**	**10,866,879**
			FY13		**Fiscal Year 2013**																	
				LS18030213	K West Basin Min Safe					68,823	4,561,267		2,931,000		669,340				62,300	8,223,907	2,817,566	11,041,472
					FY13 Fiscal Year 2013					**68,823**	**4,561,267**		**2,931,000**		**669,340**				**62,300**	**8,223,907**	**2,817,566**	**11,041,472**
			FY14		**Fiscal Year 2014**																	
				LS18030114	Maintenance					1,200			1,500				3,000			4,500	2,616	7,116
				LS18030214	K West Basin Min Safe					68,823	4,561,267		2,931,000		669,340				62,300	8,223,907	2,995,613	11,219,520
					FY14 Fiscal Year 2014					**70,023**	**4,561,267**		**2,932,500**		**669,340**		**3,000**		**62,300**	**8,228,407**	**2,998,229**	**11,226,636**
					.18.03 Maintenance					**345,315**	**22,806,333**		**14,656,500**		**3,346,699**		**3,000**		**311,500**	**41,124,033**	**13,234,829**	**54,358,862**
					.18 Operations and Maintenance					398,120	25,761,065		14,656,500		3,494,958		3,000		311,500	44,227,023	13,866,336	58,093,359
	.19				Deactivation & Decommissioning																	
		.19.01			**Deactivation & Decommissioning**																	
			FY14		**Fiscal Year 2014**																	
				LS19190114	D&D Planning																	
		.19.02			**Demolition**																	
			FY15		**Fiscal Year 2015**																	
				LS19020115	Field Staff																	
				LS19020215	Field Office																	
				LS19020315	Demolition																	
		.19.03			**Site Restoration**																	
			FY15		**Fiscal Year 2015**																	
				LS19030115	Field Staff																	
				LS19030215	Field Office																	
				LS19030315	Site Restoration																	
					H Hydraulic Loading System					**716,745**	**51,397,668**		**18,601,780**		**3,792,746**		**1,410,048**		**6,578,337**	**81,780,579**	**21,741,273**	**103,521,851**

Sludge Treatment Project

Project name Hydraulic Loading Sysr1
July 28,2009

Labor rate table Hanford FY09

Equipment rate table COMM2009

Notes
Hydrulic Loading System - IPS Engr %
K West Basin Min Safe 2010 to 2014
2010 Conceptual Design - Scale Testing
2011 Preliminary Design - Full Scale Prototype
2012 Final Design - Integrated Sys. Testing
2013 Construction
2014 Retrieve sludge
2015 Off River

Report format
Sorted by 'WBS Lvl 1/WBS Lvl 2/WBS Lvl 3/Year/Sch Acty'
'Detail' summary
Print sort level notes

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
H Hydraulic Loading System																	
.01 Project Management																	
.01.01 Project Management																	
FY10 Fiscal Year 2010																	
LS01010110 Project Management																	
Civil Engineers		52.00 wk	34.600 ch/wk	92.33 /ch	1,799	166,120	-	-	-	-	-	-	-	-	166,120	19,804	185,925
Managers & Executives		52.00 wk	34.600 ch/wk	102.62 /ch	1,799	184,634	-	-	-	-	-	-	-	-	184,634	22,012	206,646
LS01010110 Project Management					3,598	350,754									350,754	41,816	392,570
FY10 Fiscal Year 2010					**3,598**	**350,754**									**350,754**	**41,816**	**392,570**
FY11 Fiscal Year 2011																	
LS01010111 Project Management																	
Civil Engineers		52.00 wk	34.600 ch/wk	92.33 /ch	1,799	166,120	-	-	-	-	-	-	-	-	166,120	23,193	189,313
Managers & Executives		52.00 wk	34.600 ch/wk	102.62 /ch	1,799	184,634	-	-	-	-	-	-	-	-	184,634	25,778	210,412
LS01010111 Project Management					3,598	350,754									350,754	48,972	399,726
FY11 Fiscal Year 2011					**3,598**	**350,754**									**350,754**	**48,972**	**399,726**
FY12 Fiscal Year 2012																	
LS01010112 Project Management																	
Civil Engineers		52.00 wk	34.600 ch/wk	92.33 /ch	1,799	166,120	-	-	-	-	-	-	-	-	166,120	26,649	192,769
Managers & Executives		52.00 wk	34.600 ch/wk	102.62 /ch	1,799	184,634	-	-	-	-	-	-	-	-	184,634	29,619	214,252
LS01010112 Project Management					3,598	350,754									350,754	56,267	407,021
FY12 Fiscal Year 2012					**3,598**	**350,754**									**350,754**	**56,267**	**407,021**
FY13 Fiscal Year 2013																	
LS01010113 Project Management																	
Civil Engineers		52.00 wk	34.600 ch/wk	92.33 /ch	1,799	166,120	-	-	-	-	-	-	-	-	166,120	30,175	196,296
Managers & Executives		52.00 wk	34.600 ch/wk	102.62 /ch	1,799	184,634	-	-	-	-	-	-	-	-	184,634	33,538	218,172
LS01010113 Project Management					3,598	350,754									350,754	63,714	414,468
FY13 Fiscal Year 2013					**3,598**	**350,754**									**350,754**	**63,714**	**414,468**
.01.01 Project Management					**14,394**	**1,403,016**									**1,403,016**	**210,769**	**1,613,785**
.01.02 Construction Management																	
FY12 Fiscal Year 2012																	
LS01010212 Construction Management																	
Other Crafts		25.00 wk	69.200 ch/wk	52.19 /ch	1,730	90,289	-	-	-	-	-	-	-	-	90,289	30,736	121,025
First Line Supervisors		25.00 wk	34.600 ch/wk	78.54 /ch	865	67,937	-	-	-	-	-	-	-	-	67,937	23,127	91,064
Project & Program Managers		25.00 wk	34.600 ch/wk	117.10 /ch	865	101,292	-	-	-	-	-	-	-	-	101,292	34,481	135,773
Planner/Scheduler/Estimators		12.00 wk	34.600 ch/wk	86.56 /ch	415	35,940	-	-	-	-	-	-	-	-	35,940	12,235	48,174
LS01010212 Construction Management					3,875	295,457									295,457	100,579	396,036
FY12 Fiscal Year 2012					**3,875**	**295,457**									**295,457**	**100,579**	**396,036**
FY13 Fiscal Year 2013																	
LS01010213 Construction Management																	
Other Crafts		52.00 wk	69.200 ch/wk	52.19 /ch	3,598	187,801	-	-	-	-	-	-	-	-	187,801	67,918	255,718
First Line Supervisors		52.00 wk	34.600 ch/wk	78.54 /ch	1,799	141,309	-	-	-	-	-	-	-	-	141,309	51,104	192,413
Project & Program Managers		52.00 wk	34.600 ch/wk	117.10 /ch	1,799	210,686	-	-	-	-	-	-	-	-	210,686	76,194	286,881
Planner/Scheduler/Estimators		25.00 wk	34.600 ch/wk	86.56 /ch	865	74,874	-	-	-	-	-	-	-	-	74,874	27,078	101,953
LS01010213 Construction Management					8,062	614,670									614,670	222,294	836,965
FY13 Fiscal Year 2013					**8,062**	**614,670**									**614,670**	**222,294**	**836,965**
.01.02 Construction Management					**11,937**	**910,127**									**910,127**	**322,873**	**1,233,000**
.01 Project Management					26,331	2,313,144									2,313,144	533,642	2,846,785
.02 Project Support																	
.02.01 Project/Facility Support																	
FY10 Fiscal Year 2010																	
LS02010110 Project/Facility Support																	
Electrical Engineers	0.2 FTE	25.00 wk	8.000 ch/wk	79.21 /ch	200	15,842	-	-	-	-	-	-	-	-	15,842	1,889	17,731
Environmental Engineers	0.1 FTE	25.00 wk	4.000 ch/wk	82.98 /ch	100	8,298	-	-	-	-	-	-	-	-	8,298	989	9,287
Mechanical Engineers	0.2 FTE	25.00 wk	8.000 ch/wk	85.74 /ch	200	17,148	-	-	-	-	-	-	-	-	17,148	2,044	19,192
Nuclear Engineers	0.1 FTE	25.00 wk	4.000 ch/wk	94.95 /ch	100	9,495	-	-	-	-	-	-	-	-	9,495	1,132	10,627
RAD Engineers	0.1 FTE	25.00 wk	4.000 ch/wk	68.98 /ch	100	6,898	-	-	-	-	-	-	-	-	6,898	822	7,720
First Line Supervisors	0.1 FTE	25.00 wk	4.000 ch/wk	78.54 /ch	100	7,854	-	-	-	-	-	-	-	-	7,854	936	8,790
Planner/Scheduler/Estimators	0.1 FTE	25.00 wk	4.000 ch/wk	86.56 /ch	100	8,656	-	-	-	-	-	-	-	-	8,656	1,032	9,688
LS02010110 Project/Facility Support					900	74,191									74,191	8,845	83,036
FY10 Fiscal Year 2010					**900**	**74,191**									**74,191**	**8,845**	**83,036**
FY11 Fiscal Year 2011																	
LS02010111 Project/Facility Support																	
Electrical Engineers	0.2 FTE	52.00 wk	8.000 ch/wk	79.21 /ch	416	32,951	-	-	-	-	-	-	-	-	32,951	4,601	37,552
Environmental Engineers	0.1 FTE	52.00 wk	4.000 ch/wk	82.98 /ch	208	17,260	-	-	-	-	-	-	-	-	17,260	2,410	19,670
Mechanical Engineers	0.2 FTE	52.00 wk	8.000 ch/wk	85.74 /ch	416	35,668	-	-	-	-	-	-	-	-	35,668	4,980	40,648
Nuclear Engineers	0.1 FTE	52.00 wk	4.000 ch/wk	94.95 /ch	208	19,750	-	-	-	-	-	-	-	-	19,750	2,757	22,507
RAD Engineers	0.1 FTE	52.00 wk	4.000 ch/wk	68.98 /ch	208	14,348	-	-	-	-	-	-	-	-	14,348	2,003	16,351
First Line Supervisors	0.1 FTE	52.00 wk	4.000 ch/wk	78.54 /ch	208	16,336	-	-	-	-	-	-	-	-	16,336	2,281	18,617
Planner/Scheduler/Estimators	0.1 FTE	52.00 wk	4.000 ch/wk	86.56 /ch	208	18,004	-	-	-	-	-	-	-	-	18,004	2,514	20,518
LS02010111 Project/Facility Support					1,872	154,317									154,317	21,545	175,863
FY11 Fiscal Year 2011					**1,872**	**154,317**									**154,317**	**21,545**	**175,863**
FY12 Fiscal Year 2012																	
LS02010112 Project/Facility Support																	
Electrical Engineers	0.2 FTE	52.00 wk	8.000 ch/wk	79.21 /ch	416	32,951	-	-	-	-	-	-	-	-	32,951	5,286	38,237
Environmental Engineers	0.1 FTE	52.00 wk	4.000 ch/wk	82.98 /ch	208	17,260	-	-	-	-	-	-	-	-	17,260	2,769	20,029
Mechanical Engineers	0.2 FTE	52.00 wk	8.000 ch/wk	85.74 /ch	416	35,668	-	-	-	-	-	-	-	-	35,668	5,722	41,390
Nuclear Engineers	0.1 FTE	52.00 wk	4.000 ch/wk	94.95 /ch	208	19,750	-	-	-	-	-	-	-	-	19,750	3,168	22,918
RAD Engineers	0.1 FTE	52.00 wk	4.000 ch/wk	68.98 /ch	208	14,348	-	-	-	-	-	-	-	-	14,348	2,302	16,650
First Line Supervisors	0.1 FTE	52.00 wk	4.000 ch/wk	78.54 /ch	208	16,336	-	-	-	-	-	-	-	-	16,336	2,621	18,957
Planner/Scheduler/Estimators	0.1 FTE	52.00 wk	4.000 ch/wk	86.56 /ch	208	18,004	-	-	-	-	-	-	-	-	18,004	2,888	20,893
LS02010112 Project/Facility Support					1,872	154,317									154,317	24,755	179,073
FY12 Fiscal Year 2012					**1,872**	**154,317**									**154,317**	**24,755**	**179,073**
FY13 Fiscal Year 2013																	

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS02010113 Project/Facility Support																	
Electrical Engineers	0.2 FTE	52.00 wk	8.000 ch/wk	79.21 /ch	416	32,951	-	-	-	-	-	-	-	-	32,951	5,986	38,937
Environmental Engineers	0.1 FTE	52.00 wk	4.000 ch/wk	82.98 /ch	208	17,260	-	-	-	-	-	-	-	-	17,260	3,135	20,395
Mechanical Engineers	0.2 FTE	52.00 wk	8.000 ch/wk	85.74 /ch	416	35,668	-	-	-	-	-	-	-	-	35,668	6,479	42,147
Nuclear Engineers	0.1 FTE	52.00 wk	4.000 ch/wk	94.95 /ch	208	19,750	-	-	-	-	-	-	-	-	19,750	3,587	23,337
RAD Engineers	0.1 FTE	52.00 wk	4.000 ch/wk	68.98 /ch	208	14,348	-	-	-	-	-	-	-	-	14,348	2,606	16,954
First Line Supervisors	0.1 FTE	52.00 wk	4.000 ch/wk	78.54 /ch	208	16,336	-	-	-	-	-	-	-	-	16,336	2,967	19,304
Planner/Scheduler/Estimators	0.1 FTE	52.00 wk	4.000 ch/wk	86.56 /ch	208	18,004	-	-	-	-	-	-	-	-	18,004	3,270	21,275
LS02010113 Project/Facility Support					1,872	154,317									154,317	28,031	182,349
FY13 Fiscal Year 2013					**1,872**	**154,317**									**154,317**	**28,031**	**182,349**
.02.01 Project/Facility Support					**6,516**	**537,143**									**537,143**	**83,177**	**620,320**
.02 Project Support					6,516	537,143									537,143	83,177	620,320
.03 Environmental Doc., Permitting, & Waste Acceptance																	
.03.01 Environmental Documentation																	
FY11 Fiscal Year 2011																	
LS03010111 CERCLA Documentation																	
Environmental Engineers	NEPA Values (in FFS)	8.66 wk	34.600 ch/wk	82.98 /ch	300	24,864	-	-	-	-	-	-	-	-	24,864	3,471	28,335
Environmental Engineers	ESD or ROD Amendment	6.50 wk	34.600 ch/wk	82.98 /ch	225	18,648	-	-	-	-	-	-	-	-	18,648	2,604	21,251
Environmental Engineers	Proposed Plan to Amend the ROD**	4.33 wk	34.600 ch/wk	82.98 /ch	150	12,432	-	-	-	-	-	-	-	-	12,432	1,736	14,168
Environmental Engineers	Fact Sheet (RD - Completion)	2.17 wk	40.000 ch/wk	82.98 /ch	87	7,186	-	-	-	-	-	-	-	-	7,186	1,003	8,189
Environmental Engineers	Fact Sheet (ESD or ROD Amendment)	2.17 wk	40.000 ch/wk	82.98 /ch	87	7,186	-	-	-	-	-	-	-	-	7,186	1,003	8,189
Environmental Engineers	RD for 200 Area Storage (90% design)	6.50 wk	34.600 ch/wk	82.98 /ch	225	18,648	-	-	-	-	-	-	-	-	18,648	2,604	21,251
Environmental Engineers	Rad Air NOC Evaluation (T Plant) ARAR (New)	3.25 wk	34.600 ch/wk	82.98 /ch	112	9,325	-	-	-	-	-	-	-	-	9,325	1,302	10,627
Environmental Engineers	DOE O 435.1 Compliance	8.66 wk	40.000 ch/wk	82.98 /ch	346	28,744	-	-	-	-	-	-	-	-	28,744	4,013	32,757
Environmental Engineers	Focused Feasibility Study	6.50 wk	34.600 ch/wk	82.98 /ch	225	18,648	-	-	-	-	-	-	-	-	18,648	2,604	21,251
Environmental Engineers	RD / RA Work Plan (interim storage only)	2.17 wk	40.000 ch/wk	82.98 /ch	87	7,186	-	-	-	-	-	-	-	-	7,186	1,003	8,189
Environmental Engineers	Significance Evaluation / RL Interface	4.33 wk	40.000 ch/wk	82.98 /ch	173	14,372	-	-	-	-	-	-	-	-	14,372	2,007	16,379
LS03010111 CERCLA Documentation					2,015	167,239									167,239	23,350	190,589
LS03010211 Review Support																	
Environmental Engineers	3FTEs/mo Hcz Analysis EMS	13.00 wk	40.000 ch/wk	82.98 /ch	520	43,150	-	-	-	-	-	-	-	-	43,150	6,024	49,174
LS03010211 Review Support					520	43,150									43,150	6,024	49,174
FY11 Fiscal Year 2011					**2,535**	**210,389**									**210,389**	**29,374**	**239,763**
FY12 Fiscal Year 2012																	
LS03010212 Review Support																	
Environmental Engineers	3FTEs/mo Design	13.00 wk	40.000 ch/wk	82.98 /ch	520	43,150	-	-	-	-	-	-	-	-	43,150	6,922	50,072
LS03010212 Review Support					520	43,150									43,150	6,922	50,072
FY12 Fiscal Year 2012					**520**	**43,150**									**43,150**	**6,922**	**50,072**
.03.01 Environmental Documentation					**3,055**	**253,538**									**253,538**	**36,296**	**289,834**
.03.03 Waste Acceptance																	
FY12 Fiscal Year 2012																	
LS03030112 Waste Acceptance																	
Environmental Engineers	2eng -Waste Acceptance Criteria (WAC)	22.50 wk	40.000 ch/wk	82.98 /ch	900	74,682	-	-	-	-	-	-	-	-	74,682	11,980	86,662
Environmental Engineers	2 eng -Waste Profile	22.50 wk	20.000 ch/wk	82.98 /ch	450	37,341	-	-	-	-	-	-	-	-	37,341	5,990	43,331
Managers & Executives		2.00 wk	40.000 ch/wk	102.62 /ch	80	8,210	-	-	-	-	-	-	-	-	8,210	1,317	9,527
Technical Writers & Editors		2.25 wk	40.000 ch/wk	66.18 /ch	90	5,956	-	-	-	-	-	-	-	-	5,956	955	6,912
LS03030112 Waste Acceptance					1,520	126,189									126,189	20,243	146,432
FY12 Fiscal Year 2012					**1,520**	**126,189**									**126,189**	**20,243**	**146,432**
.03.03 Waste Acceptance					**1,520**	**126,189**									**126,189**	**20,243**	**146,432**
.03 Environmental Doc., Permitting, & Waste Acceptance					4,575	379,727									379,727	56,539	436,266
.04 Nuclear Safety																	
.04.01 Nuclear Safety																	
FY10 Fiscal Year 2010																	
LS04010110 Hazard Analysis																	
Nuclear Engineers		19.00 wk	40.000 ch/wk	94.95 /ch	760	72,162	-	-	-	-	-	-	-	-	72,162	8,603	80,765
LS04010110 Hazard Analysis					760	72,162									72,162	8,603	80,765
LS04010210 Accident Analysis																	
Nuclear Engineers		18.00 wk	80.000 ch/wk	94.95 /ch	1,440	136,728	-	-	-	-	-	-	-	-	136,728	16,300	153,028
LS04010210 Accident Analysis					1,440	136,728									136,728	16,300	153,028
LS04010310 Thermal/Gas Analysis Update(HNF-10858, SNF-18135,HNF-12563)																	
Nuclear Engineers		13.00 wk	40.000 ch/wk	94.95 /ch	520	49,374	-	-	-	-	-	-	-	-	49,374	5,886	55,260
LS04010310 Thermal/Gas Analysis Update(HNF-10858, SNF-18135,HNF-12563)					520	49,374									49,374	5,886	55,260
LS04010410 GAP Analysis																	
Chemical Engineers- E010		8.00 wk	40.000 ch/wk	81.66 /ch	320	26,131	-	-	-	-	-	-	-	-	26,131	3,115	29,247
LS04010410 GAP Analysis					320	26,131									26,131	3,115	29,247
LS04010510 Control Definitions																	
Nuclear Engineers	2 ea	10.00 wk	80.000 ch/wk	94.95 /ch	800	75,960	-	-	-	-	-	-	-	-	75,960	9,056	85,016
LS04010510 Control Definitions					800	75,960									75,960	9,056	85,016
LS04010610 Conceptual Safety Design Report																	
Nuclear Engineers	6FTE mo	36.00 wk	40.000 ch/wk	94.95 /ch	1,440	136,728	-	-	-	-	-	-	-	-	136,728	16,300	153,028
LS04010610 Conceptual Safety Design Report					1,440	136,728									136,728	16,300	153,028
LS04010710 Criticality Safety Analysis																	
Nuclear Engineers		6.00 wk	80.000 ch/wk	94.95 /ch	480	45,576	-	-	-	-	-	-	-	-	45,576	5,433	51,009
LS04010710 Criticality Safety Analysis					480	45,576									45,576	5,433	51,009
LS04010910 Fire Hazard Analysis																	
Nuclear Engineers		6.00 wk	40.000 ch/wk	94.95 /ch	240	22,788	-	-	-	-	-	-	-	-	22,788	2,717	25,505
LS04010910 Fire Hazard Analysis					240	22,788									22,788	2,717	25,505
LS04011010 EPHA																	
Nuclear Engineers		39.00 wk	40.000 ch/wk	94.95 /ch	1,560	148,122	-	-	-	-	-	-	-	-	148,122	17,659	165,781
LS04011010 EPHA					1,560	148,122									148,122	17,659	165,781
FY10 Fiscal Year 2010					**7,560**	**713,569**									**713,569**	**85,070**	**798,639**
FY11 Fiscal Year 2011																	

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS04010111 Hazard Analysis																	
Nuclear Engineers		13.30 wk	40.000 ch/wk	94.95 /ch	532	50,513	-	-	-	-	-	-	-	-	50,513	7,053	57,566
LS04010111 Hazard Analysis					532	50,513									50,513	7,053	57,566
LS04010211 Accident Analysis																	
Nuclear Engineers		12.60 wk	80.000 ch/wk	94.95 /ch	1,008	95,710	-	-	-	-	-	-	-	-	95,710	13,363	109,072
LS04010211 Accident Analysis					1,008	95,710									95,710	13,363	109,072
LS04010311 Thermal/Gas Analysis Update(HNF-10858, SNF-18135,HNF-12563)																	
Nuclear Engineers		9.10 wk	40.000 ch/wk	94.95 /ch	364	34,562	-	-	-	-	-	-	-	-	34,562	4,825	39,387
LS04010311 Thermal/Gas Analysis Update(HNF-10858, SNF-18135,HNF-12563)					364	34,562									34,562	4,825	39,387
LS04010411 GAP Analysis																	
Chemical Engineers- E010		5.60 wk	40.000 ch/wk	81.66 /ch	224	18,292	-	-	-	-	-	-	-	-	18,292	2,554	20,846
LS04010411 GAP Analysis					224	18,292									18,292	2,554	20,846
LS04010511 Control Definitions																	
Nuclear Engineers	2 ea	7.00 wk	80.000 ch/wk	94.95 /ch	560	53,172	-	-	-	-	-	-	-	-	53,172	7,424	60,596
LS04010511 Control Definitions					560	53,172									53,172	7,424	60,596
LS04010611 Preliminary Safety Design Report																	
Nuclear Engineers	6FTE mo	25.20 wk	40.000 ch/wk	94.95 /ch	1,008	95,710	-	-	-	-	-	-	-	-	95,710	13,363	109,072
LS04010611 Preliminary Safety Design Report					1,008	95,710									95,710	13,363	109,072
LS04010711 Criticality Safety Analysis																	
Nuclear Engineers		4.20 wk	80.000 ch/wk	94.95 /ch	336	31,903	-	-	-	-	-	-	-	-	31,903	4,454	36,357
LS04010711 Criticality Safety Analysis					336	31,903									31,903	4,454	36,357
LS04010911 Fire Hazard Analysis																	
Nuclear Engineers		4.20 wk	40.000 ch/wk	94.95 /ch	168	15,952	-	-	-	-	-	-	-	-	15,952	2,227	18,179
LS04010911 Fire Hazard Analysis					168	15,952									15,952	2,227	18,179
LS04011011 EPHA																	
Nuclear Engineers		27.30 wk	40.000 ch/wk	94.95 /ch	1,092	103,685	-	-	-	-	-	-	-	-	103,685	14,476	118,162
LS04011011 EPHA					1,092	103,685									103,685	14,476	118,162
FY11 Fiscal Year 2011					**5,292**	**499,498**									**499,498**	**69,739**	**569,237**
FY12 Fiscal Year 2012																	
LS04010112 Hazard Analysis																	
Nuclear Engineers		7.60 wk	40.000 ch/wk	94.95 /ch	304	28,865	-	-	-	-	-	-	-	-	28,865	4,630	33,495
LS04010112 Hazard Analysis					304	28,865									28,865	4,630	33,495
LS04010212 Accident Analysis																	
Nuclear Engineers		7.20 wk	80.000 ch/wk	94.95 /ch	576	54,691	-	-	-	-	-	-	-	-	54,691	8,773	63,465
LS04010212 Accident Analysis					576	54,691									54,691	8,773	63,465
LS04010312 Thermal/Gas Analysis Update(HNF-10858, SNF-18135,HNF-12563)																	
Nuclear Engineers		5.20 wk	40.000 ch/wk	94.95 /ch	208	19,750	-	-	-	-	-	-	-	-	19,750	3,168	22,918
LS04010312 Thermal/Gas Analysis Update(HNF-10858, SNF-18135,HNF-12563)					208	19,750									19,750	3,168	22,918
LS04010412 GAP Analysis																	
Chemical Engineers- E010		3.20 wk	40.000 ch/wk	81.66 /ch	128	10,452	-	-	-	-	-	-	-	-	10,452	1,677	12,129
LS04010412 GAP Analysis					128	10,452									10,452	1,677	12,129
LS04010512 Control Definitions																	
Nuclear Engineers	2 ea	4.00 wk	80.000 ch/wk	94.95 /ch	320	30,384	-	-	-	-	-	-	-	-	30,384	4,874	35,258
LS04010512 Control Definitions					320	30,384									30,384	4,874	35,258
LS04010612 Preliminary Safety Design Report																	
Nuclear Engineers	6FTE mo	14.40 wk	40.000 ch/wk	94.95 /ch	576	54,691	-	-	-	-	-	-	-	-	54,691	8,773	63,465
LS04010612 Preliminary Safety Design Report					576	54,691									54,691	8,773	63,465
LS04010712 Criticality Safety Analysis																	
Nuclear Engineers		2.40 wk	80.000 ch/wk	94.95 /ch	192	18,230	-	-	-	-	-	-	-	-	18,230	2,924	21,155
LS04010712 Criticality Safety Analysis					192	18,230									18,230	2,924	21,155
LS04010912 Fire Hazard Analysis																	
Nuclear Engineers		2.40 wk	40.000 ch/wk	94.95 /ch	96	9,115	-	-	-	-	-	-	-	-	9,115	1,462	10,577
LS04010912 Fire Hazard Analysis					96	9,115									9,115	1,462	10,577
LS04011012 EPHA																	
Nuclear Engineers		15.60 wk	40.000 ch/wk	94.95 /ch	624	59,249	-	-	-	-	-	-	-	-	59,249	9,505	68,753
LS04011012 EPHA					624	59,249									59,249	9,505	68,753
FY12 Fiscal Year 2012					**3,024**	**285,428**									**285,428**	**45,788**	**331,215**
FY13 Fiscal Year 2013																	
LS04010113 Hazard Analysis																	
Nuclear Engineers		5.70 wk	40.000 ch/wk	94.95 /ch	228	21,649	-	-	-	-	-	-	-	-	21,649	3,932	25,581
LS04010113 Hazard Analysis					228	21,649									21,649	3,932	25,581
LS04010213 Accident Analysis																	
Nuclear Engineers		5.40 wk	80.000 ch/wk	94.95 /ch	432	41,018	-	-	-	-	-	-	-	-	41,018	7,451	48,469
LS04010213 Accident Analysis					432	41,018									41,018	7,451	48,469
LS04010313 Thermal/Gas Analysis Update(HNF-10858, SNF-18135,HNF-12563)																	
Nuclear Engineers		3.90 wk	40.000 ch/wk	94.95 /ch	156	14,812	-	-	-	-	-	-	-	-	14,812	2,691	17,503
LS04010313 Thermal/Gas Analysis Update(HNF-10858, SNF-18135,HNF-12563)					156	14,812									14,812	2,691	17,503
LS04010413 GAP Analysis																	
Chemical Engineers- E010		2.40 wk	40.000 ch/wk	81.66 /ch	96	7,839	-	-	-	-	-	-	-	-	7,839	1,424	9,263
LS04010413 GAP Analysis					96	7,839									7,839	1,424	9,263
LS04010513 Control Definitions																	
Nuclear Engineers	2 ea	3.00 wk	80.000 ch/wk	94.95 /ch	240	22,788	-	-	-	-	-	-	-	-	22,788	4,139	26,927
LS04010513 Control Definitions					240	22,788									22,788	4,139	26,927
LS04010613 Conceptual Safety Design Report																	
Nuclear Engineers	6FTE mo	10.80 wk	40.000 ch/wk	94.95 /ch	432	41,018	-	-	-	-	-	-	-	-	41,018	7,451	48,469
LS04010613 Conceptual Safety Design Report					432	41,018									41,018	7,451	48,469
LS04010713 Criticality Safety Analysis																	
Nuclear Engineers		1.80 wk	80.000 ch/wk	94.95 /ch	144	13,673	-	-	-	-	-	-	-	-	13,673	2,484	16,156

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS04010713 Criticality Safety Analysis					144	13,673									13,673	2,484	16,156
LS04010913 Fire Hazard Analysis																	
Nuclear Engineers		1.80 wk	40.000 ch/wk	94.95 /ch	72	6,836	-	-	-	-	-	-	-	-	6,836	1,242	8,078
LS04010913 Fire Hazard Analysis					72	6,836									6,836	1,242	8,078
LS04011013 EPHA																	
Nuclear Engineers		11.70 wk	40.000 ch/wk	94.95 /ch	468	44,437	-	-	-	-	-	-	-	-	44,437	8,072	52,508
LS04011013 EPHA					468	44,437									44,437	8,072	52,508
FY13 Fiscal Year 2013					**2,268**	**214,071**									**214,071**	**38,886**	**252,956**
.04.01 Nuclear Safety					**18,144**	**1,712,566**									**1,712,566**	**239,482**	**1,952,048**
.04 Nuclear Safety					18,144	1,712,566									1,712,566	239,482	1,952,048
.05 Radiological Control																	
.05.01 Radiological Control																	
FY10 Fiscal Year 2010																	
LS05050110 Radiological Control																	
Nuclear Engineers	.1FTE	52.00 wk	4.000 ch/wk	94.95 /ch	208	19,750	-	-	-	-	-	-	-	-	19,750	2,355	22,104
LS05050110 Radiological Control					208	19,750									19,750	2,355	22,104
FY10 Fiscal Year 2010					**208**	**19,750**									**19,750**	**2,355**	**22,104**
FY11 Fiscal Year 2011																	
LS05050111 Radiological Control																	
Nuclear Engineers	.1FTE	52.00 wk	4.000 ch/wk	94.95 /ch	208	19,750	-	-	-	-	-	-	-	-	19,750	2,757	22,507
LS05050111 Radiological Control					208	19,750									19,750	2,757	22,507
FY11 Fiscal Year 2011					**208**	**19,750**									**19,750**	**2,757**	**22,507**
FY12 Fiscal Year 2012																	
LS05050112 Radiological Control																	
Nuclear Engineers	.1FTE	52.00 wk	4.000 ch/wk	94.95 /ch	208	19,750	-	-	-	-	-	-	-	-	19,750	3,168	22,918
LS05050112 Radiological Control					208	19,750									19,750	3,168	22,918
FY12 Fiscal Year 2012					**208**	**19,750**									**19,750**	**3,168**	**22,918**
FY13 Fiscal Year 2013																	
LS05050113 Radiological Control																	
Nuclear Engineers	.1FTE	52.00 wk	4.000 ch/wk	94.95 /ch	208	19,750	-	-	-	-	-	-	-	-	19,750	3,587	23,337
LS05050113 Radiological Control					208	19,750									19,750	3,587	23,337
FY13 Fiscal Year 2013					**208**	**19,750**									**19,750**	**3,587**	**23,337**
.05.01 Radiological Control					**832**	**78,998**									**78,998**	**11,868**	**90,866**
.05 Radiological Control					832	78,998									78,998	11,868	90,866
.06 Industrial Safety																	
.06.01 Industrial Safety																	
FY10 Fiscal Year 2010																	
LS06060110 Industrial Safety																	
Safety Engineer	0.1 FTE	52.00 wk	4.000 ch/wk	71.00 /ch	208	14,768	-	-	-	-	-	-	-	-	14,768	1,761	16,529
LS06060110 Industrial Safety					208	14,768									14,768	1,761	16,529
FY10 Fiscal Year 2010					**208**	**14,768**									**14,768**	**1,761**	**16,529**
FY11 Fiscal Year 2011																	
LS06060111 Industrial Safety																	
Safety Engineer	0.1 FTE	52.00 wk	4.000 ch/wk	71.00 /ch	208	14,768	-	-	-	-	-	-	-	-	14,768	2,062	16,830
LS06060111 Industrial Safety					208	14,768									14,768	2,062	16,830
FY11 Fiscal Year 2011					**208**	**14,768**									**14,768**	**2,062**	**16,830**
FY12 Fiscal Year 2012																	
LS06060112 Industrial Safety																	
Safety Engineer	0.1 FTE	52.00 wk	4.000 ch/wk	71.00 /ch	208	14,768	-	-	-	-	-	-	-	-	14,768	2,369	17,137
LS06060112 Industrial Safety					208	14,768									14,768	2,369	17,137
FY12 Fiscal Year 2012					**208**	**14,768**									**14,768**	**2,369**	**17,137**
FY13 Fiscal Year 2013																	
LS06060113 Industrial Safety																	
Safety Engineer	0.1 FTE	52.00 wk	4.000 ch/wk	71.00 /ch	208	14,768	-	-	-	-	-	-	-	-	14,768	2,683	17,451
LS06060113 Industrial Safety					208	14,768									14,768	2,683	17,451
FY13 Fiscal Year 2013					**208**	**14,768**									**14,768**	**2,683**	**17,451**
.06.01 Industrial Safety					**832**	**59,072**									**59,072**	**8,874**	**67,946**
.06 Industrial Safety					832	59,072									59,072	8,874	67,946
.07 Quality Assurance																	
.07.01 Quality Assurance																	
FY10 Fiscal Year 2010																	
LS07070110 Quality Assurance																	
Quality Control Engineers	0.2 FTE	52.00 wk	8.000 ch/wk	75.25 /ch	416	31,304	-	-	-	-	-	-	-	-	31,304	3,732	35,036
LS07070110 Quality Assurance					416	31,304									31,304	3,732	35,036
FY10 Fiscal Year 2010					**416**	**31,304**									**31,304**	**3,732**	**35,036**
FY11 Fiscal Year 2011																	
LS07070111 Quality Assurance																	
Quality Control Engineers	0.2 FTE	52.00 wk	8.000 ch/wk	75.25 /ch	416	31,304	-	-	-	-	-	-	-	-	31,304	4,371	35,675
LS07070111 Quality Assurance					416	31,304									31,304	4,371	35,675
FY11 Fiscal Year 2011					**416**	**31,304**									**31,304**	**4,371**	**35,675**
FY12 Fiscal Year 2012																	
LS07070112 Quality Assurance																	
Quality Control Engineers	0.2 FTE	52.00 wk	8.000 ch/wk	75.25 /ch	416	31,304	-	-	-	-	-	-	-	-	31,304	5,022	36,326
LS07070112 Quality Assurance					416	31,304									31,304	5,022	36,326
FY12 Fiscal Year 2012					**416**	**31,304**									**31,304**	**5,022**	**36,326**
FY13 Fiscal Year 2013																	
LS07070113 Quality Assurance																	
Quality Control Engineers	0.2 FTE	52.00 wk	8.000 ch/wk	75.25 /ch	416	31,304	-	-	-	-	-	-	-	-	31,304	5,686	36,990
LS07070113 Quality Assurance					416	31,304									31,304	5,686	36,990
FY13 Fiscal Year 2013					**416**	**31,304**									**31,304**	**5,686**	**36,990**

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
.07.01 Quality Assurance					**1,664**	**125,216**									**125,216**	**18,811**	**144,027**
.07 Quality Assurance					1,664	125,216									125,216	18,811	144,027
.08 Safeguards & Security																	
.08.01 Safeguards & Security																	
FY10 Fiscal Year 2010																	
LS08080110 Design Review Of Conceptual Design																	
Administrative Assistants		8.00 wk	40.000 ch/wk	47.45 /ch	320	15,184	-	-	-	-	-	-	-	-	15,184	1,810	16,994
Safeguard & Security		8.00 wk	40.000 ch/wk	65.54 /ch	320	20,973	-	-	-	-	-	-	-	-	20,973	2,500	23,473
LS08080110 Design Review Of Conceptual Design					640	36,157									36,157	4,311	40,467
FY10 Fiscal Year 2010					**640**	**36,157**									**36,157**	**4,311**	**40,467**
FY11 Fiscal Year 2011																	
LS08080111 Vulnerability Assessment																	
Administrative Assistants		8.00 wk	40.000 ch/wk	47.45 /ch	320	15,184	-	-	-	-	-	-	-	-	15,184	2,120	17,304
Safeguard & Security		8.00 wk	40.000 ch/wk	65.54 /ch	320	20,973	-	-	-	-	-	-	-	-	20,973	2,928	23,901
LS08080111 Vulnerability Assessment					640	36,157									36,157	5,048	41,205
FY11 Fiscal Year 2011					**640**	**36,157**									**36,157**	**5,048**	**41,205**
.08.01 Safeguards & Security					**1,280**	**72,314**									**72,314**	**9,359**	**81,672**
.08 Safeguards & Security					1,280	72,314									72,314	9,359	81,672
.09 Technology Development																	
.09.01 Technology Development Testing																	
FY10 Fiscal Year 2010																	
LS09090110 Componet/Scale Testing TRL 3																	
Electrical Engineers		52.00 wk	40.000 ch/wk	79.21 /ch	2,080	164,757	-	-	-	-	-	-	-	-	164,757	19,642	184,399
Mechanical Engineers		52.00 wk	40.000 ch/wk	85.74 /ch	2,080	178,339	-	-	-	-	-	-	-	-	178,339	21,261	199,600
Nuclear Engineers		52.00 wk	40.000 ch/wk	94.95 /ch	2,080	197,496	-	-	-	-	-	-	-	-	197,496	23,545	221,041
Other Engineers		52.00 wk	40.000 ch/wk	106.23 /ch	2,080	220,958	-	-	-	-	-	-	-	-	220,958	26,342	247,301
Component / Scale Testing Materials		1.00 ls		-		-	-	-	-	-	100,000.00 /ls	100,000	-	-	100,000	20,222	120,222
LS09090110 Componet/Scale Testing TRL 3					8,320	761,550						100,000			861,550	111,012	972,563
FY10 Fiscal Year 2010					**8,320**	**761,550**						**100,000**			**861,550**	**111,012**	**972,563**
FY11 Fiscal Year 2011																	
LS09090111 Engineering Scale TRL 5																	
Electrical Engineers		52.00 wk	40.000 ch/wk	79.21 /ch	2,080	164,757	-	-	-	-	-	-	-	-	164,757	23,003	187,760
Mechanical Engineers		52.00 wk	40.000 ch/wk	85.74 /ch	2,080	178,339	-	-	-	-	-	-	-	-	178,339	24,899	203,239
Nuclear Engineers		52.00 wk	40.000 ch/wk	94.95 /ch	2,080	197,496	-	-	-	-	-	-	-	-	197,496	27,574	225,070
Other Engineers		52.00 wk	40.000 ch/wk	106.23 /ch	2,080	220,958	-	-	-	-	-	-	-	-	220,958	30,850	251,808
Full Scale Prototype Construction		1.00 ls		-		-	-	-	-	-	250,000.00 /ls	250,000	-	-	250,000	55,654	305,654
LS09090111 Engineering Scale TRL 5					8,320	761,550						250,000			1,011,550	161,981	1,173,531
FY11 Fiscal Year 2011					**8,320**	**761,550**						**250,000**			**1,011,550**	**161,981**	**1,173,531**
FY12 Fiscal Year 2012																	
LS09090112 Full Scale TRL 7																	
Electrical Engineers		52.00 wk	40.000 ch/wk	79.21 /ch	2,080	164,757	-	-	-	-	-	-	-	-	164,757	26,430	191,187
Mechanical Engineers		52.00 wk	40.000 ch/wk	85.74 /ch	2,080	178,339	-	-	-	-	-	-	-	-	178,339	28,609	206,948
Nuclear Engineers		52.00 wk	40.000 ch/wk	94.95 /ch	2,080	197,496	-	-	-	-	-	-	-	-	197,496	31,682	229,178
Other Engineers		52.00 wk	40.000 ch/wk	106.23 /ch	2,080	220,958	-	-	-	-	-	-	-	-	220,958	35,446	256,404
Full Scale Integrated System Testing		1.00 ls		-		-	-	-	-	-	100,000.00 /ls	100,000	-	-	100,000	24,342	124,342
LS09090112 Full Scale TRL 7					8,320	761,550						100,000			861,550	146,508	1,008,058
FY12 Fiscal Year 2012					**8,320**	**761,550**						**100,000**			**861,550**	**146,508**	**1,008,058**
.09.01 Technology Development Testing					**24,960**	**2,284,651**						**450,000**			**2,734,651**	**419,501**	**3,154,152**
.09.02 Technology Development Assessments																	
FY10 Fiscal Year 2010																	
LS09090210 Componet/Scale Testing TRL 3																	
Electrical Engineers		52.00 wk	40.000 ch/wk	79.21 /ch	2,080	164,757	-	-	-	-	-	-	-	-	164,757	19,642	184,399
Mechanical Engineers		52.00 wk	40.000 ch/wk	85.74 /ch	2,080	178,339	-	-	-	-	-	-	-	-	178,339	21,261	199,600
Nuclear Engineers		52.00 wk	40.000 ch/wk	94.95 /ch	2,080	197,496	-	-	-	-	-	-	-	-	197,496	23,545	221,041
Other Engineers		52.00 wk	40.000 ch/wk	106.23 /ch	2,080	220,958	-	-	-	-	-	-	-	-	220,958	26,342	247,301
Component / Scale Testing Materials		1.00 ls		-		-	-	-	-	-	100,000.00 /ls	100,000	-	-	100,000	20,222	120,222
LS09090210 Componet/Scale Testing TRL 3					8,320	761,550						100,000			861,550	111,012	972,563
FY10 Fiscal Year 2010					**8,320**	**761,550**						**100,000**			**861,550**	**111,012**	**972,563**
FY11 Fiscal Year 2011																	
LS09090211 Engineering Scale TRL 5																	
Electrical Engineers		52.00 wk	40.000 ch/wk	79.21 /ch	2,080	164,757	-	-	-	-	-	-	-	-	164,757	23,003	187,760
Mechanical Engineers		52.00 wk	40.000 ch/wk	85.74 /ch	2,080	178,339	-	-	-	-	-	-	-	-	178,339	24,899	203,239
Nuclear Engineers		52.00 wk	40.000 ch/wk	94.95 /ch	2,080	197,496	-	-	-	-	-	-	-	-	197,496	27,574	225,070
Other Engineers		52.00 wk	40.000 ch/wk	106.23 /ch	2,080	220,958	-	-	-	-	-	-	-	-	220,958	30,850	251,808
Full Scale Prototype Construction		1.00 ls		-		-	-	-	-	-	250,000.00 /ls	250,000	-	-	250,000	55,654	305,654
LS09090211 Engineering Scale TRL 5					8,320	761,550						250,000			1,011,550	161,981	1,173,531
FY11 Fiscal Year 2011					**8,320**	**761,550**						**250,000**			**1,011,550**	**161,981**	**1,173,531**
FY12 Fiscal Year 2012																	
LS09090212 Full Scale TRL 7																	
Electrical Engineers		52.00 wk	40.000 ch/wk	79.21 /ch	2,080	164,757	-	-	-	-	-	-	-	-	164,757	26,430	191,187
Mechanical Engineers		52.00 wk	40.000 ch/wk	85.74 /ch	2,080	178,339	-	-	-	-	-	-	-	-	178,339	28,609	206,948
Nuclear Engineers		52.00 wk	40.000 ch/wk	94.95 /ch	2,080	197,496	-	-	-	-	-	-	-	-	197,496	31,682	229,178
Other Engineers		52.00 wk	40.000 ch/wk	106.23 /ch	2,080	220,958	-	-	-	-	-	-	-	-	220,958	35,446	256,404
Full Scale Integrated System Testing		1.00 ls		-		-	-	-	-	-	100,000.00 /ls	100,000	-	-	100,000	24,342	124,342
LS09090212 Full Scale TRL 7					8,320	761,550						100,000			861,550	146,508	1,008,058
FY12 Fiscal Year 2012					**8,320**	**761,550**						**100,000**			**861,550**	**146,508**	**1,008,058**
.09.02 Technology Development Assessments					**24,960**	**2,284,651**						**450,000**			**2,734,651**	**419,501**	**3,154,152**
.09.03 Technology Maturation Plan																	
FY10 Fiscal Year 2010																	
LS09090310 Componet/Scale Testing TRL 3																	
Electrical Engineers		52.00 wk	40.000 ch/wk	79.21 /ch	2,080	164,757	-	-	-	-	-	-	-	-	164,757	19,642	184,399
Mechanical Engineers		52.00 wk	40.000 ch/wk	85.74 /ch	2,080	178,339	-	-	-	-	-	-	-	-	178,339	21,261	199,600
Nuclear Engineers		52.00 wk	40.000 ch/wk	94.95 /ch	2,080	197,496	-	-	-	-	-	-	-	-	197,496	23,545	221,041

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS09090310 Componet/Scale Testing TRL 3																	
Other Engineers		52.00 wk	40.000 ch/wk	106.23 /ch	2,080	220,958	-	-	-	-	-	-	-	-	220,958	26,342	247,301
Component / Scale Testing Materials		1.00 ls		-	-	-	-	-	-	-	100,000.00 /ls	100,000	-	-	100,000	20,222	120,222
LS09090310 Componet/Scale Testing TRL 3					3,320	761,550						100,000			861,550	111,012	972,563
FY10 Fiscal Year 2010					**8,320**	**761,550**						**100,000**			**861,550**	**111,012**	**972,563**
FY11 Fiscal Year 2011																	
LS09090311 Engineering Scale TRL 5																	
Electrical Engineers		52.00 wk	40.000 ch/wk	79.21 /ch	2,080	164,757	-	-	-	-	-	-	-	-	164,757	23,003	187,760
Mechanical Engineers		52.00 wk	40.000 ch/wk	85.74 /ch	2,080	178,339	-	-	-	-	-	-	-	-	178,339	24,899	203,239
Nuclear Engineers		52.00 wk	40.000 ch/wk	94.95 /ch	2,080	197,496	-	-	-	-	-	-	-	-	197,496	27,574	225,070
Other Engineers		52.00 wk	40.000 ch/wk	106.23 /ch	2,080	220,958	-	-	-	-	-	-	-	-	220,958	30,850	251,808
Full Scale Prototype Construction		1.00 ls		-	-	-	-	-	-	-	250,000.00 /ls	250,000	-	-	250,000	55,654	305,654
LS09090311 Engineering Scale TRL 5					8,320	761,550						250,000			1,011,550	161,981	1,173,531
FY11 Fiscal Year 2011					**8,320**	**761,550**						**250,000**			**1,011,550**	**161,981**	**1,173,531**
FY12 Fiscal Year 2012																	
LS09090312 Full Scale TRL 7																	
Electrical Engineers		52.00 wk	40.000 ch/wk	79.21 /ch	2,080	164,757	-	-	-	-	-	-	-	-	164,757	26,430	191,187
Mechanical Engineers		52.00 wk	40.000 ch/wk	85.74 /ch	2,080	178,339	-	-	-	-	-	-	-	-	178,339	28,609	206,948
Nuclear Engineers		52.00 wk	40.000 ch/wk	94.95 /ch	2,080	197,496	-	-	-	-	-	-	-	-	197,496	31,682	229,178
Other Engineers		52.00 wk	40.000 ch/wk	106.23 /ch	2,080	220,958	-	-	-	-	-	-	-	-	220,958	35,446	256,404
Full Scale Integrated System Testing		1.00 ls		-	-	-	-	-	-	-	100,000.00 /ls	100,000	-	-	100,000	24,342	124,342
LS09090312 Full Scale TRL 7					8,320	761,550						100,000			861,550	146,508	1,008,058
FY12 Fiscal Year 2012					**8,320**	**761,550**						**100,000**			**861,550**	**146,508**	**1,008,058**
.09.03 Technology Maturation Plan					**24,960**	**2,284,651**						**450,000**			**2,734,651**	**419,501**	**3,154,152**
.09 Technology Development					74,880	6,853,954						1,350,000			8,203,954	1,258,502	9,462,456
.10 Conceptual Design																	
.10.01 Conceptual Design																	
FY10 Fiscal Year 2010																	
LS10100110 Conceptual Design																	
Electrical Engineers		80.00 wk	40.000 ch/wk	79.21 /ch	3,200	253,472	-	-	-	-	-	-	-	-	253,472	30,218	283,690
Environmental Engineers		80.00 wk	40.000 ch/wk	82.98 /ch	3,200	265,536	-	-	-	-	-	-	-	-	265,536	31,657	297,193
Mechanical Engineers		80.00 wk	40.000 ch/wk	85.74 /ch	3,200	274,368	-	-	-	-	-	-	-	-	274,368	32,710	307,078
Nuclear Engineers		80.00 wk	40.000 ch/wk	94.95 /ch	3,200	303,840	-	-	-	-	-	-	-	-	303,840	36,223	340,063
LS10100110 Conceptual Design					12,800	1,097,216									1,097,216	130,808	1,228,024
FY10 Fiscal Year 2010					**12,800**	**1,097,216**									**1,097,216**	**130,808**	**1,228,024**
.10.01 Conceptual Design					**12,800**	**1,097,216**									**1,097,216**	**130,808**	**1,228,024**
.10 Conceptual Design					12,800	1,097,216									1,097,216	130,808	1,228,024
.11 Preliminary Design																	
.11.01 Preliminary Design																	
FY11 Fiscal Year 2011																	
LS11110111 Preliminary Design																	
Electrical Engineers		120.00 wk	40.000 ch/wk	79.21 /ch	4,800	380,208	-	-	-	-	-	-	-	-	380,208	53,084	433,292
Environmental Engineers		120.00 wk	40.000 ch/wk	82.98 /ch	4,800	398,304	-	-	-	-	-	-	-	-	398,304	55,610	453,914
Mechanical Engineers		120.00 wk	40.000 ch/wk	85.74 /ch	4,800	411,552	-	-	-	-	-	-	-	-	411,552	57,460	469,012
Nuclear Engineers		120.00 wk	40.000 ch/wk	94.95 /ch	4,800	455,760	-	-	-	-	-	-	-	-	455,760	63,632	519,392
LS11110111 Preliminary Design					19,200	1,645,824									1,645,824	229,786	1,875,610
FY11 Fiscal Year 2011					**19,200**	**1,645,824**									**1,645,824**	**229,786**	**1,875,610**
.11.01 Preliminary Design					**19,200**	**1,645,824**									**1,645,824**	**229,786**	**1,875,610**
.11 Preliminary Design					19,200	1,645,824									1,645,824	229,786	1,875,610
.12 Final Design																	
.12.01 Final Design																	
FY12 Fiscal Year 2012																	
LS12120112 Final Design																	
Electrical Engineers		239.00 wk	40.000 ch/wk	79.21 /ch	9,560	757,248	-	-	-	-	-	-	-	-	757,248	121,476	878,724
Environmental Engineers		239.00 wk	40.000 ch/wk	82.98 /ch	9,560	793,289	-	-	-	-	-	-	-	-	793,289	127,258	920,547
Mechanical Engineers		239.00 wk	40.000 ch/wk	85.74 /ch	9,560	819,674	-	-	-	-	-	-	-	-	819,674	131,490	951,165
Nuclear Engineers		239.00 wk	40.000 ch/wk	94.95 /ch	9,560	907,722	-	-	-	-	-	-	-	-	907,722	145,615	1,053,337
LS12120112 Final Design					38,240	3,277,933									3,277,933	525,839	3,803,772
FY12 Fiscal Year 2012					**38,240**	**3,277,933**									**3,277,933**	**525,839**	**3,803,772**
.12.01 Final Design					**38,240**	**3,277,933**									**3,277,933**	**525,839**	**3,803,772**
.12 Final Design					38,240	3,277,933									3,277,933	525,839	3,803,772
.13 Engineering During Construction																	
.13.01 Engineering During Construction																	
FY13 Fiscal Year 2013																	
LS13130113 Engineering During Construction																	
Electrical Engineers		159.00 wk	40.000 ch/wk	79.21 /ch	6,360	503,776	-	-	-	-	-	-	-	-	503,776	91,510	595,285
Environmental Engineers		159.00 wk	40.000 ch/wk	82.98 /ch	6,360	527,753	-	-	-	-	-	-	-	-	527,753	95,865	623,618
Mechanical Engineers		159.00 wk	40.000 ch/wk	85.74 /ch	6,360	545,306	-	-	-	-	-	-	-	-	545,306	99,054	644,360
Nuclear Engineers		159.00 wk	40.000 ch/wk	94.95 /ch	6,360	603,882	-	-	-	-	-	-	-	-	603,882	109,694	713,576
LS13130113 Engineering During Construction					25,440	2,180,717									2,180,717	396,123	2,576,839
FY13 Fiscal Year 2013					**25,440**	**2,180,717**									**2,180,717**	**396,123**	**2,576,839**
.13.01 Engineering During Construction					**25,440**	**2,180,717**									**2,180,717**	**396,123**	**2,576,839**
.13 Engineering During Construction					25,440	2,180,717									2,180,717	396,123	2,576,839
.14 Procurement																	
.14.01 Procurement Support																	
FY12 Fiscal Year 2012																	
LS14140112 Procurement Support																	
Secretaries		52.00 wk	10.000 ch/wk	36.30 /ch	520	18,876	-	-	-	-	-	-	-	-	18,876	3,028	21,904
Buyers/Procurement/Contracting		52.00 wk	20.000 ch/wk	70.24 /ch	1,040	73,050	-	-	-	-	-	-	-	-	73,050	11,718	84,768
LS14140112 Procurement Support					1,560	91,926									91,926	14,747	106,672
FY12 Fiscal Year 2012					**1,560**	**91,926**									**91,926**	**14,747**	**106,672**
FY13 Fiscal Year 2013																	
LS14140113 Procurement Support																	

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS14140113 Procurement Support																	
Secretaries		20.00 wk	10.000 ch/wk	36.30 /ch	200	7,260	-	-	-	-	-	-	-	-	7,260	1,319	8,579
Buyers/Procurement/Contracting		20.00 wk	20.000 ch/wk	70.24 /ch	400	28,096	-	-	-	-	-	-	-	-	28,096	5,104	33,200
LS14140113 Procurement Support					600	35,356									35,356	6,422	41,778
FY13 Fiscal Year 2013					**600**	**35,356**									**35,356**	**6,422**	**41,778**
.14.01 Procurement Support					**2,160**	**127,282**									**127,282**	**21,169**	**148,450**
.14.02 Equipment Procurement																	
FY13 Fiscal Year 2013																	
LS14020113 Equipment Procurement																	
Scales, truck type, digital, electronic, steel deck, 50 ton capacity, 40' x 10' platform, incl. steel weigh bridge, excl. foundation, pits		1.00 ea		/ea			24,600.00 /ea	24,600	-	-	-	-	-	-	24,600	6,510	31,110
Overhead Bridge Cranes, under hung hoist, electric operating, 1 girder, 7.5 ton, 30' span		1.00 ea		0.00 /ea		0	32,600.00 /ea	32,600	-	-	0.00 /ea	0	-	-	32,600	8,628	41,228
Vessel, ss, 1050gal -STSC	Sludge Transfer and Storage Container (STSC) Subcontract costs are certification costs	30.00 ea	4.748 ch/ea	143.94 /ch	285	20,503	50,354.85 /ea	1,510,646	5,000.00 /ea	150,000	-	-	-	-	1,681,149	430,761	2,111,909
XAGO Tool	Nuvision Engineering - 1 spare	2.00 ea		-		-	-	-	50,000.00 /ea	100,000	-	-	-	-	100,000	18,165	118,165
Centrifugal, pumps, 15 HP,	Under water pump & motor 15 hp	1.00 ea		/ea			30,000.00 /ea	30,000	-	-	/ea		-	-	30,000	7,939	37,939
LS14020113 Equipment Procurement					285	20,503		1,597,846		250,000					1,868,349	472,003	2,340,351
FY13 Fiscal Year 2013					**285**	**20,503**		**1,597,846**		**250,000**					**1,868,349**	**472,003**	**2,340,351**
.14.02 Equipment Procurement					**285**	**20,503**		**1,597,846**		**250,000**					**1,868,349**	**472,003**	**2,340,351**
.14 Procurement					2,445	147,785		1,597,846		250,000					1,995,630	493,172	2,488,802
.15 Construction																	
.15.01 New Construction																	
FY13 Fiscal Year 2013																	
LS15010113 Field Staff																	
Project Manager		47.00 wk	40.000 ch/wk	101.69 /ch	1,880	191,172	-	-	-	-	-	-	-	-	191,172	91,122	282,293
Project Project Engineer		47.00 wk	40.000 mh/wk	91.36 /mh	1,880	171,755	-	-	-	-	-	-	-	-	171,755	81,867	253,622
Superintendent		47.00 wk	40.000 mh/wk	96.30 /mh	1,880	181,038	-	-	-	-	-	-	-	-	181,038	86,292	267,330
Field Engineer		47.00 wk	40.000 mh/wk	64.20 /mh	1,880	120,690	-	-	-	-	-	-	-	-	120,690	57,527	178,217
Health & Safety		47.00 wk	40.000 mh/wk	83.95 /mh	1,880	157,826	-	-	-	-	-	-	-	-	157,826	75,227	233,053
Quality Assurance / Quality Control		47.00 wk	40.000 mh/wk	83.95 /mh	1,880	157,826	-	-	-	-	-	-	-	-	157,826	75,227	233,053
Radiation Control Technician		47.00 wk	40.000 mh/wk	64.20 /mh	1,880	120,690	-	-	-	-	-	-	-	-	120,690	57,527	178,217
Project Controls - Estimating, Scheduling		47.00 wk	40.000 mh/wk	54.49 /mh	1,880	102,432	-	-	-	-	-	-	-	-	102,432	48,824	151,256
Time Keeper		47.00 wk	40.000 mh/wk	39.73 /mh	1,880	74,689	-	-	-	-	-	-	-	-	74,689	35,600	110,289
Clerk		47.00 wk	40.000 mh/wk	14.43 /mh	1,880	27,134	-	-	-	-	-	-	-	-	27,134	12,933	40,067
LS15010113 Field Staff					18,800	1,305,252									1,305,252	622,146	1,927,398
LS15010213 Field Office & Supplies																	
Pants Reuse	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 288 each per year.	376.00 ea		-		-	-	-	2.45 /ea	921	-	-	-	-	921	439	1,360
Shirt Reuse	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 288 each per year.	376.00 ea		-		-	-	-	2.20 /ea	827	-	-	-	-	827	394	1,221
Tee Shirt Reuse	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 288 each per year.	376.00 ea		-		-	-	-	2.25 /ea	846	-	-	-	-	846	403	1,249
Underware Reuse	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 288 each per year.	376.00 ea		-		-	-	-	1.25 /ea	470	-	-	-	-	470	224	694
Socks - pair Reuse	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 288 each per year.	376.00 ea		-		-	-	-	0.50 /ea	188	-	-	-	-	188	90	278
Hard hat Reuse	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 288 each per year.	5.00 ea		-		-	-	-	6.50 /ea	33	-	-	-	-	33	15	48
Safety Shoes Reuse	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 288 each per year.	5.00 ea		-		-	-	-	47.80 /ea	239	-	-	-	-	239	114	353
Laundry Reuse - Level D	Based on Non-Radiological Contamanated Items UniTech Services Group Subcontract No 00500573 @ ICP	94.00 ea		-		-	-	-	6.05 /ea	569	-	-	-	-	569	271	840
Office Trailer, furnished, rent per month, 50' x 12', excl. hookups		2.00 ea		-		-	375.00 /ea	750	-	-	-	-	-	-	750	420	1,170
Field Office Expense, office equipment rental, average		12.00 mo		-		-	150.00 /mo	1,800	-	-	-	-	-	-	1,800	1,007	2,807
Field Office Expense, office supplies, average		12.00 mo		-		-	95.00 /mo	1,140	-	-	-	-	-	-	1,140	638	1,778
Field Office Expense, telephone bill; avg. bill/month, incl. long dist.		12.00 mo		-		-	210.00 /mo	2,520	-	-	-	-	-	-	2,520	1,410	3,930
Field Office Expense, field office lights & HVAC		12.00 mo		-		-	110.00 /mo	1,320	-	-	-	-	-	-	1,320	739	2,059
Shop extra for drawings and detailing		1.00 ls		-		-	10,000.00 /ls	10,000	-	-	-	-	-	-	10,000	5,596	15,596
Structural steel project, shop extra for drawings and detailing, (included in project material cost, above)		1.00 ton		-		-	255.00 /ton	255	-	-	-	-	-	-	255	143	398
LS15010213 Field Office & Supplies								17,785		4,093					21,878	11,904	33,782
LS15010313 Demolition & Bldg Seperation																	
LLMW - Disposal @ Hanford ERDIFF	1.296 tons per cy concrete ruble	60.00 ton		-		-	-	-	40.00 /ton	2,400	-	-	-	-	2,400	1,144	3,544
LLMW - Disposal @ Hanford ERDIFF	metal deck, channels, wf columns and beams	40.00 ton		-		-	-	-	40.00 /ton	1,600	-	-	-	-	1,600	763	2,363
Soil testing, soil density, nuclear method, ASTM D2922	Backfill demo area to sub grade	0.79 ea		-		-	-	-	-	-	-	-	35.00 /ea	28	28	13	41
Soil testing, Proctor compaction, 6" modified mold	Backfill demo area to sub grade	1.00 ea		-		-	-	-	-	-	-	-	68.00 /ea	68	68	32	100
Earthwork inspection technician, per day	Backfill demo area to sub grade	0.10 ea		-		-	-	-	-	-	-	-	210.00 /ea	21	21	10	30
Minor site demolition, slab on grade , rod reinforced, 8" thick, remove, excludes hauling	Backfill demo area to sub grade	27.00 cy	0.699 ch/cy	308.75 /ch	132	5,824	-	-	-	-	147.68 /ch	2,786	-	-	8,610	4,335	12,945
Bldg. footings and foundations demolition, footings, concrete, 1' thick, 2' wide, excludes disposal costs and dump fees	Backfill demo area to sub grade	100.00 lf	0.058 ch/lf	308.75 /ch	41	1,798	-	-	-	-	147.68 /ch	860	-	-	2,658	1,338	3,996
Bldg. footings and foundations demolition, remove concrete walls, plain concrete, 12" thick, excludes disposal costs and dump fees	Backfill demo area to sub grade	200.00 sf	0.175 ch/sf	214.66 /ch	175	7,499	-	-	-	-	23.93 /ch	836	-	-	8,335	4,042	12,377
Selective demolition, saw cutting,on walls		40.00 lf	0.087 ch/lf	49.69 /ch	3	174	-	-	-	-	-	-	-	-	174	83	256
Selective demolition, saw cutting, on roof		20.00 lf	0.070 ch/lf	49.69 /ch	1	69	-	-	-	-	-	-	-	-	69	33	103

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS15010313 Demolition & Bldg Seperation																	
Selective metals demolition, structural bolts/nuts, up to 3/4" diameter, unbolt & remove, excl shoring, bracing, cutting, loading, hauling, dumping		16.00 ea	0.073 ch/ea	57.15 /ch	1	67	-	-	-	-	-	-	-	-	67	32	98
Selective metals demolition, structural bolts/nuts, up to 3/4" diameter, unbolt & remove, excl shoring, bracing, cutting, loading, hauling, dumping		86.00 ea	0.073 ch/ea	57.15 /ch	6	358	-	-	-	-	-	-	-	-	358	170	528
Selectv metals demolition,lightwt framing members,21 - 40lb,remove whole cut into smaller pieces,excl shoring,bracing,cutting,loading,hauling,dumping	Selective metals demolition, lightweight framing members, 21 - 40 lb, remove whole or cut up into smaller pieces, excl shoring, bracing, cutting, loading, hauling, dumping X brace angles	8.00 ea	0.083 ch/ea	114.31 /ch	1	76	-	-	-	-	-	-	-	-	76	36	112
Selectv metals demolition,lightwt framing members,21 - 40lb,remove whole cut into smaller pieces,excl shoring,bracing,cutting,loading,hauling,dumping	Selective metals demolition, lightweight framing members, 21 - 40 lb, remove whole or cut up into smaller pieces, excl shoring, bracing, cutting, loading, hauling, dumping Sheeting girts	28.00 ea	0.083 ch/ea	114.31 /ch	5	266	-	-	-	-	-	-	-	-	266	127	393
Selectv metals demolition,lightwt framing members,81 - 120lb,remove whole cut into smaller pieces,excl shoring,bracing,cutting,loading,hauling,dumping	joists and Z8 14 GA	23.00 ea	0.116 ch/ea	228.62 /ch	11	612	-	-	-	-	-	-	-	-	612	292	904
Selctv metals demoltn,strt framing members,1/4 - 2 tons,remove whole cut into smaller pieces,incl loading,excl shoring,bracing,cutting,hauling,dumping	Main columns	4.00 ea	0.485 ch/ea	275.66 /ch	10	535	-	-	-	-	135.00 /ch	262	-	-	797	402	1,199
Selctv metals demoltn,strt framing members,1/4 - 2 tons,remove whole cut into smaller pieces,incl loading,excl shoring,bracing,cutting,hauling,dumping	W 16 x 50	2.00 ea	0.485 ch/ea	275.66 /ch	5	268	-	-	-	-	135.00 /ch	131	-	-	399	201	599
Selctv metals demoltn,strt framing members,1/4 - 2 tons,remove whole cut into smaller pieces,incl loading,excl shoring,bracing,cutting,hauling,dumping	W 12 x 50	2.00 ea	0.485 ch/ea	275.66 /ch	5	268	-	-	-	-	135.00 /ch	131	-	-	399	201	599
Selctv metals demoltn,strt framing members,1/4 - 2 tons,remove whole cut into smaller pieces,incl loading,excl shoring,bracing,cutting,hauling,dumping	W 18 x 76 crane rail & beam	2.00 ea	0.485 ch/ea	275.66 /ch	5	268	-	-	-	-	135.00 /ch	131	-	-	399	201	599
Selctv metals demiltn,mnfctr fabrctd specity item,121 - 500lb,remove whole cut into smaller pieces,excl shoring,bracing,cutting,loading,hauling,dumping	C 8 x 14	4.00 ea	0.364 ch/ea	161.35 /ch	4	235	-	-	-	-	135.00 /ch	197	-	-	431	222	653
Selctv metals demiltn,mnfctr fabrctd specity item,121 - 500lb,remove whole cut into smaller pieces,excl shoring,bracing,cutting,loading,hauling,dumping	W 12 x 26	1.00 ea	0.364 ch/ea	161.35 /ch	1	59	-	-	-	-	135.00 /ch	49	-	-	108	56	163
Selctv metals demiltn,mnfctr fabrctd specity item,121 - 500lb,remove whole cut into smaller pieces,excl shoring,bracing,cutting,loading,hauling,dumping	W 8 x 24	14.00 ea	0.364 ch/ea	161.35 /ch	15	822	-	-	-	-	135.00 /ch	688	-	-	1,510	777	2,287
Roofing and siding demolition, deck, roof, metal decking	decking	800.00 sf	0.005 ch/sf	308.75 /ch	28	1,235	-	-	-	-	98.68 /ch	395	-	-	1,630	810	2,439
Roofing and siding demolition, deck, roof, metal decking	siding	2,800.00 sf	0.005 ch/sf	308.75 /ch	98	4,322	-	-	-	-	98.68 /ch	1,381	-	-	5,704	2,833	8,537
Insulation removal, batts or blankets		1,800.00 cf	0.012 ch/cf	42.93 /ch	22	964	-	-	-	-	-	-	-	-	964	459	1,423
Ductwork, metal; steel and sst, fabricated, selective demolition		500.00 lb	0.017 ch/lb	118.50 /ch	17	1,035	-	-	-	-	-	-	-	-	1,035	493	1,528
Self contained single package air conditioner, up thru 10 ton, selective demolition		2.00 ea	10.917 ch/ea	143.94 /ch	44	3,143	-	-	-	-	-	-	-	-	3,143	1,498	4,641
Conduit, rgid galvanized steel, 1/2" to 1" diameter, electrical demolition, remove conduit to 15' high, incl fittings & hangers		100.00 lf	0.072 ch/lf	59.61 /ch	7	430	-	-	-	-	-	-	-	-	430	205	635
Wire, THW-THWN-THHN, #12, electrical demolition, removed from in place conduit, to 15' high		3.00 clf	0.318 ch/clf	59.61 /ch	1	57	-	-	-	-	-	-	-	-	57	27	84
Fluorescent fixture, explosionproof, electrical demolition, remove	interior	8.00 ea	2.156 ch/ea	59.61 /ch	17	1,028	-	-	-	-	-	-	-	-	1,028	490	1,518
Quartz, electrical demolition, remove	exterior	2.00 ea	0.194 ch/ea	59.61 /ch	0	23	-	-	-	-	-	-	-	-	23	11	34
Excavating, bulk bank measure, 5 C.Y. capacity = 185 C.Y /hour, wheel mounted, excluding truck loading		78.67 bcy	0.012 ch/bcy	68.51 /ch	1	64	-	-	-	-	106.80 /ch	99	-	-	163	86	249
Backfill, structural, sand and gravel, 80 H.P. dozer, 50' haul, excludes compaction		90.47 lcy	0.016 ch/lcy	68.51 /ch	2	98	-	-	-	-	49.90 /ch	72	-	-	170	87	257
Hauling, excavated or borrow material, loose cubic yards, 1/4 mile round trip, 3.7 loads/hour, 12 C.Y. dump truck, highway haulers, excludes loading		90.47 lcy	0.061 ch/lcy	48.02 /ch	5	264	-	-	-	-	66.63 /ch	366	-	-	629	330	959
Hauling,excavated borrow material,loose cubic yards,20 mile round trip,0.4 load/hr,base wide rate,12 cy truck,highway haulers,excludes loading	Hauling, waste to ERDF	120.00 lcy	0.448 ch/lcy	48.02 /ch	54	2,581	-	-	-	-	66.63 /ch	3,581	-	-	6,162	3,234	9,396
Compaction, structural, common fill, 8" lifts, sheepsfoot or wobbly wheel roller		90.47 ecy	0.013 ch/ecy	68.51 /ch	2	83	-	-	-	-	142.75 /ch	173	-	-	257	137	393
LS15010313 Demolition & Bldg Seperation					721	34,523				4,000		12,137		116	50,776	25,210	75,985
LS15010413 Earthwork																	
Soil testing, soil density, nuclear method, ASTM D2922	Backfill footings 8 ea 22'x2'x2'	0.26 ea	-			-	-	-	-	-	-	-	35.00 /ea	9	9	4	13
Soil testing, soil density, nuclear method, ASTM D2922	grade beam backfill 156 x4 x2	0.46 ea	-			-	-	-	-	-	-	-	35.00 /ea	16	16	8	24
Soil testing, Proctor compaction, 6" modified mold	Backfill footings 8 ea 22'x2'x2'	8.00 ea	-			-	-	-	-	-	-	-	68.00 /ea	544	544	259	803
Soil testing, Proctor compaction, 6" modified mold	grade beam backfill 156 x4 x2	1.00 ea	-			-	-	-	-	-	-	-	68.00 /ea	68	68	32	100
Earthwork inspection technician, per day	Backfill footings 8 ea 22'x2'x2'	0.03 ea	-			-	-	-	-	-	-	-	210.00 /ea	7	7	3	10
Earthwork inspection technician, per day	grade beam backfill 156 x4 x2	0.06 ea	-			-	-	-	-	-	-	-	210.00 /ea	12	12	6	18
Excavating, bulk bank measure, 3.5 C.Y. capacity = 160 C.Y./hour, backhoe, hydraulic, crawler mounted, excluding truck loading	Footings 8 ea 8' x 7' x 3'	49.78 bcy	0.007 ch/bcy	89.98 /ch	1	33	-	-	-	-	407.00 /ch	147	-	-	180	98	278
Excavating, bulk bank measure, 3.5 C.Y. capacity = 160 C.Y./hour, backhoe, hydraulic, crawler mounted, excluding truck loading	grade beam 151' x 5.42' x1.5'	45.47 bcy	0.007 ch/bcy	89.98 /ch	1	30	-	-	-	-	407.00 /ch	135	-	-	164	89	254
Excavating, bulk bank measure, 3.5 C.Y. capacity = 160 C.Y./hour, backhoe, hydraulic, crawler mounted, excluding truck loading	scale pit 36' x 17' x 2.75'	62.33 bcy	0.007 ch/bcy	89.98 /ch	1	41	-	-	-	-	407.00 /ch	184	-	-	225	123	348
Excavating, bulk bank measure, 5 C.Y. capacity = 185 C.Y./hour, wheel mounted, excluding truck loading	Backfill footings 8 ea 22'x2'x2'	26.07 bcy	0.012 ch/bcy	68.51 /ch	0	21	-	-	-	-	106.80 /ch	33	-	-	54	28	82
Excavating, bulk bank measure, 5 C.Y. capacity = 185 C.Y./hour, wheel mounted, excluding truck loading	grade beam backfill 156 x4 x2	46.22 bcy	0.012 ch/bcy	68.51 /ch	1	37	-	-	-	-	106.80 /ch	58	-	-	96	50	146
Backfill, structural, sand and gravel, 80 H.P. dozer, 50' haul, excludes compaction	Backfill footings 8 ea 22'x2'x2'	29.99 lcy	0.016 ch/lcy	68.51 /ch	1	33	-	-	-	-	49.90 /ch	24	-	-	56	29	85
Backfill, structural, sand and gravel, 80 H.P. dozer, 50' haul, excludes compaction	grade beam backfill 156 x4 x2	53.16 lcy	0.016 ch/lcy	68.51 /ch	1	58	-	-	-	-	49.90 /ch	42	-	-	100	51	151
Hauling, excavated or borrow material, loose cubic yards, 1/4 mile round trip, 3.7 loads/hour, 12 C.Y. dump truck, highway haulers, excludes loading	Footings 8 ea 8' x 7' x 3'	57.24 lcy	0.061 ch/lcy	48.02 /ch	3	167	-	-	-	-	66.63 /ch	231	-	-	398	209	607
Hauling, excavated or borrow material, loose cubic yards, 1/4 mile round trip, 3.7 loads/hour, 12 C.Y. dump truck, highway haulers, excludes loading	grade beam 151' x 5.42' x1.5'	52.29 lcy	0.061 ch/lcy	48.02 /ch	3	152	-	-	-	-	66.63 /ch	211	-	-	364	191	554
Hauling, excavated or borrow material, loose cubic yards, 1/4 mile round trip, 3.7 loads/hour, 12 C.Y. dump truck, highway haulers, excludes loading	scale pit	71.68 lcy	0.061 ch/lcy	48.02 /ch	4	209	-	-	-	-	66.63 /ch	290	-	-	498	262	760
Hauling, excavated or borrow material, loose cubic yards, 1/4 mile round trip, 3.7 loads/hour, 12 C.Y. dump truck, highway haulers, excludes loading	Backfill footings 8 ea 22'x2'x2'	29.99 lcy	0.061 ch/lcy	48.02 /ch	2	87	-	-	-	-	66.63 /ch	121	-	-	209	109	318
Hauling, excavated or borrow material, loose cubic yards, 1/4 mile round trip, 3.7 loads/hour, 12 C.Y. dump truck, highway haulers, excludes loading	grade beam backfill 156 x4 x2	53.16 lcy	0.061 ch/lcy	48.02 /ch	3	155	-	-	-	-	66.63 /ch	215	-	-	370	194	564
Compaction, structural, common fill, 8" lifts, sheepsfoot or wobbly wheel roller	Backfill footings 8 ea 22'x2'x2'	29.99 ecy	0.013 ch/ecy	68.51 /ch	1	28	-	-	-	-	142.75 /ch	57	-	-	85	45	130
Compaction, structural, common fill, 8" lifts, sheepsfoot or wobbly wheel roller	grade beam backfill 156 x4 x2	53.16 ecy	0.013 ch/ecy	68.51 /ch	1	49	-	-	-	-	142.75 /ch	102	-	-	151	80	231

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS15010413 Earthwork					23	1,098						1,851		656	3,606	1,872	5,478
LS15010513 Concrete Work																	
Concrete testing, cement, physical tests, ASTM C 150	Concrete Footings 6' x 5' x 2' - 8 ea	0.36 ea		-		-	-	-	-	-	-	-	318.00 /ea	113	113	54	167
Concrete testing, cement, physical tests, ASTM C 150	Grade beam 150.75' x1.42' x 1.5'	0.24 ea		-		-	-	-	-	-	-	-	318.00 /ea	76	76	36	112
Concrete testing, cement, physical tests, ASTM C 150	Concrete SOG Ramps 58 x 14 x 1	1.80 ea		-		-	-	-	-	-	-	-	318.00 /ea	574	574	273	847
Concrete testing, cement, physical tests, ASTM C 150	Concrete Walls - 9" Retention wall on aprons	0.10 ea		-		-	-	-	-	-	-	-	318.00 /ea	30	30	14	45
Concrete testing, cement, physical tests, ASTM C 150	Concrete SOG - Floor, Scale pit floor	3.30 ea		-		-	-	-	-	-	-	-	318.00 /ea	1,048	1,048	500	1,548
Concrete testing, cement, physical tests, ASTM C 150	scale pit wall	0.16 ea		-		-	-	-	-	-	-	-	318.00 /ea	51	51	24	75
Concrete testing, cement, physical tests, ASTM C 150	Sand filter SOG 11 x11x 1	0.27 ea		-		-	-	-	-	-	-	-	318.00 /ea	86	86	41	126
Concrete testing, cement, physical tests, ASTM C 150	Concrete Walls - Sand filter 40 x 1 x 10	0.30 ea		-		-	-	-	-	-	-	-	318.00 /ea	94	94	45	139
Concrete testing, cement, physical tests, ASTM C 150	Concrete SOG HEPA Filter SOG 20.25 x 19.75 x .67	0.51 ea		-		-	-	-	-	-	-	-	318.00 /ea	161	161	77	237
Concrete testing, cement, physical tests, ASTM C 150	Concrete wall HEPA Filter 74 x 1.5 x 2	0.16 ea		-		-	-	-	-	-	-	-	318.00 /ea	52	52	25	77
Concrete testing, compressive strength test, ASTM C 39, incl. delivery to lab per cylinder	Concrete Footings 6' x 5' x 2' - 8 ea	1.07 ea		-		-	-	-	-	-	-	-	12.00 /ea	13	13	6	19
Concrete testing, compressive strength test, ASTM C 39, incl. delivery to lab per cylinder	Grade beam 150.75' x1.42' x 1.5'	0.71 ea		-		-	-	-	-	-	-	-	12.00 /ea	9	9	4	13
Concrete testing, compressive strength test, ASTM C 39, incl. delivery to lab per cylinder	Concrete SOG Ramps 58 x 14 x 1	0.60 ea		-		-	-	-	-	-	-	-	12.00 /ea	7	7	3	11
Concrete testing, compressive strength test, ASTM C 39, incl. delivery to lab per cylinder	Concrete Walls - 9" Retention wall on aprons	0.29 ea		-		-	-	-	-	-	-	-	12.00 /ea	3	3	2	5
Concrete testing, compressive strength test, ASTM C 39, incl. delivery to lab per cylinder	Concrete SOG - Floor, Scale pit floor	1.10 ea		-		-	-	-	-	-	-	-	12.00 /ea	13	13	6	19
Concrete testing, compressive strength test, ASTM C 39, incl. delivery to lab per cylinder	scale pit wall	0.48 ea		-		-	-	-	-	-	-	-	12.00 /ea	6	6	3	8
Concrete testing, compressive strength test, ASTM C 39, incl. delivery to lab per cylinder	Sand filter SOG 11 x11x 1	0.09 ea		-		-	-	-	-	-	-	-	12.00 /ea	1	1	1	2
Concrete testing, compressive strength test, ASTM C 39, incl. delivery to lab per cylinder	Concrete Walls - Sand filter 40 x 1 x 10	0.89 ea		-		-	-	-	-	-	-	-	12.00 /ea	11	11	5	16
Concrete testing, compressive strength test, ASTM C 39, incl. delivery to lab per cylinder	Concrete SOG HEPA Filter SOG 20.25 x 19.75 x .67	0.17 ea		-		-	-	-	-	-	-	-	12.00 /ea	2	2	1	3
Concrete testing, compressive strength test, ASTM C 39, incl. delivery to lab per cylinder	Concrete wall HEPA Filter 74 x 1.5 x 2	0.49 ea		-		-	-	-	-	-	-	-	12.00 /ea	6	6	3	9
C.I.P. concrete forms, footing, continuous wall, plywood, 1 use, includes erecting, bracing, stripping and cleaning	Concrete Footings 6' x 5' x 2' - 8 ea	192.00 sfca	0.047 ch/sfca	192.00 /ch	36	1,717	7.45 /sfca	1,430	-	-	-	-	-	-	3,147	1,619	4,766
C.I.P. concrete forms, slab on grade, edge, wood, 7" to 12" high, 4 use, includes erecting, bracing, stripping and cleaning	Concrete SOG Ramps 58 x 14 x 1	144.00 sfca	0.040 ch/sfca	192.00 /ch	23	1,110	0.74 /sfca	107	-	-	-	-	-	-	1,217	589	1,805
C.I.P. concrete forms, slab on grade, edge, wood, 7" to 12" high, 4 use, includes erecting, bracing, stripping and cleaning	Concrete SOG - Floor, Scale pit floor	166.50 sfca	0.040 ch/sfca	192.00 /ch	27	1,284	0.74 /sfca	123	-	-	-	-	-	-	1,407	681	2,087
C.I.P. concrete forms, slab on grade, edge, wood, 7" to 12" high, 4 use, includes erecting, bracing, stripping and cleaning	Sand filter SOG 11 x11x 1	44.00 sfca	0.040 ch/sfca	192.00 /ch	7	339	0.74 /sfca	33	-	-	-	-	-	-	372	180	552
C.I.P. concrete forms, slab on grade, edge, wood, 7" to 12" high, 4 use, includes erecting, bracing, stripping and cleaning	Concrete SOG HEPA Filter SOG 20.25 x 19.75 x .67	49.58 sfca	0.040 ch/sfca	192.00 /ch	8	382	0.74 /sfca	37	-	-	-	-	-	-	419	203	622
C.I.P. concrete forms, wall, job built, plywood, to 8' high, 4 use, includes erecting, bracing, stripping and cleaning	Grade beam 150.75' x1.42' x 1.5'	452.25 sfca	0.035 ch/sfca	291.38 /ch	94	4,558	0.95 /sfca	430	-	-	-	-	-	-	4,988	2,413	7,401
C.I.P. concrete forms, wall, job built, plywood, to 8' high, 4 use, includes erecting, bracing, stripping and cleaning	Concrete Walls - 9" Retention wall on aprons	342.00 sfca	0.035 ch/sfca	291.38 /ch	71	3,447	0.95 /sfca	325	-	-	-	-	-	-	3,772	1,825	5,597
C.I.P. concrete forms, wall, job built, plywood, to 8' high, 4 use, includes erecting, bracing, stripping and cleaning	scale pit wall	287.00 sfca	0.035 ch/sfca	291.38 /ch	60	2,893	0.95 /sfca	273	-	-	-	-	-	-	3,165	1,531	4,697
C.I.P. concrete forms, wall, job built, plywood, to 8' high, 4 use, includes erecting, bracing, stripping and cleaning	Concrete Walls - Sand filter 40 x 1 x 10	800.00 sfca	0.035 ch/sfca	291.38 /ch	166	8,063	0.95 /sfca	760	-	-	-	-	-	-	8,823	4,269	13,092
C.I.P. concrete forms, wall, job built, plywood, to 8' high, 4 use, includes erecting, bracing, stripping and cleaning	Concrete wall HEPA Filter 74 x 1.5 x 2	296.00 sfca	0.035 ch/sfca	291.38 /ch	61	2,983	0.95 /sfca	281	-	-	-	-	-	-	3,265	1,579	4,844
Anchor bolts, J-type, 3/4" diameter x 24" long, includes nut and washer	Concrete Footings 6' x 5' x 2' - 8 ea	32.00 ea	0.349 ch/ea	49.69 /ch	11	555	3.96 /ea	127	-	-	-	-	-	-	682	336	1,018
Anchor bolts, J-type, 3/4" diameter x 24" long, includes nut and washer	Concrete Pilasters HEPA Filter Area 4 columns	16.00 ea	0.349 ch/ea	49.69 /ch	6	278	3.96 /ea	63	-	-	-	-	-	-	341	168	509
Chamfer strip, wood, 3/4" wide	Grade beam 150.75' x1.42' x 1.5'	301.50 lf	0.033 ch/lf	49.69 /ch	10	499	0.21 /lf	63	-	-	-	-	-	-	562	273	835
Chamfer strip, wood, 3/4" wide	Concrete Walls - 9" Retention wall on aprons	228.00 lf	0.033 ch/lf	49.69 /ch	8	377	0.21 /lf	48	-	-	-	-	-	-	425	207	631
Chamfer strip, wood, 3/4" wide	scale pit wall	164.00 lf	0.033 ch/lf	49.69 /ch	5	271	0.21 /lf	34	-	-	-	-	-	-	306	149	454
Chamfer strip, wood, 3/4" wide	Concrete Walls - Sand filter 40 x 1 x 10	80.00 lf	0.033 ch/lf	49.69 /ch	3	132	0.21 /lf	17	-	-	-	-	-	-	149	72	222
Chamfer strip, wood, 3/4" wide	Concrete wall HEPA Filter 74 x 1.5 x 2	148.00 lf	0.033 ch/lf	49.69 /ch	5	245	0.21 /lf	31	-	-	-	-	-	-	276	134	410
Waterstop, PVC, ribbed, 3/16" thick x 4" wide	Concrete Footings 6' x 5' x 2' - 8 ea	48.00 lf	0.113 ch/lf	49.69 /ch	5	269	1.08 /lf	52	-	-	-	-	-	-	321	157	478
Waterstop, PVC, ribbed, 3/16" thick x 4" wide	Grade beam 150.75' x1.42' x 1.5'	150.75 lf	0.113 ch/lf	49.69 /ch	17	844	1.08 /lf	163	-	-	-	-	-	-	1,007	493	1,500
Waterstop, PVC, ribbed, 3/16" thick x 4" wide	Concrete Walls - 9" Retention wall on aprons	114.00 lf	0.113 ch/lf	49.69 /ch	13	638	1.08 /lf	123	-	-	-	-	-	-	761	373	1,135
Waterstop, PVC, ribbed, 3/16" thick x 4" wide	scale pit wall	82.00 lf	0.113 ch/lf	49.69 /ch	9	459	1.08 /lf	89	-	-	-	-	-	-	548	268	816
Waterstop, PVC, ribbed, 3/16" thick x 4" wide	Concrete Walls - Sand filter 40 x 1 x 10	40.00 lf	0.113 ch/lf	49.69 /ch	5	224	1.08 /lf	43	-	-	-	-	-	-	267	131	398
Waterstop, PVC, ribbed, 3/16" thick x 4" wide	Concrete wall HEPA Filter 74 x 1.5 x 2	74.00 lf	0.113 ch/lf	49.69 /ch	8	414	1.08 /lf	80	-	-	-	-	-	-	494	242	737
Beam bolsters, for reinforcing steel, lower (BB), plain steel, 1-1/2" high, includes material only	Concrete Footings 6' x 5' x 2' - 8 ea	0.80 clf		-		-	100.00 /clf	80	-	-	-	-	-	-	80	45	125
Beam bolsters, for reinforcing steel, lower (BB), plain steel, 1-1/2" high, includes material only	Grade beam 150.75' x1.42' x 1.5'	0.71 clf		-		-	100.00 /clf	71	-	-	-	-	-	-	71	40	111
Beam bolsters, for reinforcing steel, lower (BB), plain steel, 1-1/2" high, includes material only	Concrete Walls - 9" Retention wall on aprons	0.29 clf		-		-	100.00 /clf	29	-	-	-	-	-	-	29	16	44
Beam bolsters, for reinforcing steel, lower (BB), plain steel, 1-1/2" high, includes material only	scale pit wall	0.41 clf		-		-	100.00 /clf	41	-	-	-	-	-	-	41	23	64
Beam bolsters, for reinforcing steel, lower (BB), plain steel, 1-1/2" high, includes material only	Concrete Walls - Sand filter 40 x 1 x 10	0.13 clf		-		-	100.00 /clf	13	-	-	-	-	-	-	13	7	21
Beam bolsters, for reinforcing steel, lower (BB), plain steel, 1-1/2" high, includes material only	Concrete wall HEPA Filter 74 x 1.5 x 2	0.37 clf		-		-	100.00 /clf	37	-	-	-	-	-	-	37	21	58
Slab bolsters, for reinforcing steel, continuous (SB), plain steel, 1" high, includes material only	Concrete SOG Ramps 58 x 14 x 1	2.71 clf		-		-	86.50 /clf	234	-	-	-	-	-	-	234	131	365
Slab bolsters, for reinforcing steel, continuous (SB), plain steel, 1" high, includes material only	Concrete SOG - Floor, Scale pit floor	4.94 clf		-		-	86.50 /clf	428	-	-	-	-	-	-	428	239	667
Slab bolsters, for reinforcing steel, continuous (SB), plain steel, 1" high, includes material only	Sand filter SOG 11 x11x 1	0.40 clf		-		-	86.50 /clf	35	-	-	-	-	-	-	35	20	54
Slab bolsters, for reinforcing steel, continuous (SB), plain steel, 1" high, includes material only	Concrete SOG HEPA Filter SOG 20.25 x 19.75 x .67	1.13 clf		-		-	86.50 /clf	98	-	-	-	-	-	-	98	55	153

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS15010513 Concrete Work																	
Reinforcing steel, in place, footings, #4 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	Concrete Footings 6' x 5' x 2' - 8 ea	1.66 ton	8.318 ch/ton	183.26 /ch	55	2,524	1,475.00 /ton	2,443	-	-	-	-	-	-	4,967	2,570	7,537
Reinforcing steel, in place, slab on grade, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	Concrete SOG Ramps 58 x 14 x 1	2.62 ton	7.594 ch/ton	183.26 /ch	80	3,651	1,475.00 /ton	3,869	-	-	-	-	-	-	7,519	3,905	11,425
Reinforcing steel, in place, slab on grade, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	Concrete SOG - Floor, Scale pit floor	9.51 ton	7.594 ch/ton	183.26 /ch	289	13,228	1,475.00 /ton	14,020	-	-	-	-	-	-	27,248	14,151	41,400
Reinforcing steel, in place, slab on grade, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	Sand filter SOG 11 x11x 1	0.80 ton	7.594 ch/ton	183.26 /ch	24	1,112	1,475.00 /ton	1,179	-	-	-	-	-	-	2,291	1,190	3,480
Reinforcing steel, in place, slab on grade, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	Concrete SOG HEPA Filter SOG 20.25 x 19.75 x .67	1.10 ton	7.594 ch/ton	183.26 /ch	33	1,532	1,475.00 /ton	1,624	-	-	-	-	-	-	3,156	1,639	4,795
Reinforcing steel, in place, walls, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	Grade beam 150.75' x1.42' x 1.5'	1.10 ton	5.822 ch/ton	183.26 /ch	26	1,173	1,475.00 /ton	1,621	-	-	-	-	-	-	2,794	1,466	4,260
Reinforcing steel, in place, walls, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	Concrete Walls - 9" Retention wall on aprons	0.27 ton	5.822 ch/ton	183.26 /ch	6	286	1,475.00 /ton	395	-	-	-	-	-	-	681	358	1,039
Reinforcing steel, in place, walls, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	scale pit wall	0.22 ton	5.822 ch/ton	183.26 /ch	5	235	1,475.00 /ton	325	-	-	-	-	-	-	559	293	853
Reinforcing steel, in place, walls, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	Concrete Walls - Sand filter 40 x 1 x 10	2.61 ton	5.822 ch/ton	183.26 /ch	61	2,782	1,475.00 /ton	3,845	-	-	-	-	-	-	6,627	3,478	10,105
Reinforcing steel, in place, walls, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	Concrete wall HEPA Filter 74 x 1.5 x 2	0.53 ton	5.822 ch/ton	183.26 /ch	12	563	1,475.00 /ton	779	-	-	-	-	-	-	1,342	704	2,047
Struct concrete,ready mix,normal wt,4000 psi,includes local aggregate,sand,portland cement and water,delivered,excludes all additives and treatments	Concrete Footings 6' x 5' x 2' - 8 ea	17.78 cy		-		-	106.00 /cy	1,884	-	-	-	-	-	-	1,884	1,055	2,939
Struct concrete,ready mix,normal wt,4000 psi,includes local aggregate,sand,portland cement and water,delivered,excludes all additives and treatments	Grade beam 150.75' x1.42' x 1.5'	11.89 cy		-		-	106.00 /cy	1,261	-	-	-	-	-	-	1,261	706	1,966
Struct concrete,ready mix,normal wt,4000 psi,includes local aggregate,sand,portland cement and water,delivered,excludes all additives and treatments	Concrete SOG Ramps 58 x 14 x 1	30.07 cy		-		-	106.00 /cy	3,188	-	-	-	-	-	-	3,188	1,784	4,972
Struct concrete,ready mix,normal wt,4000 psi,includes local aggregate,sand,portland cement and water,delivered,excludes all additives and treatments	Concrete Walls - 9" Retention wall on aprons	4.75 cy		-		-	106.00 /cy	504	-	-	-	-	-	-	504	282	785
Struct concrete,ready mix,normal wt,4000 psi,includes local aggregate,sand,portland cement and water,delivered,excludes all additives and treatments	Concrete SOG - Floor, Scale pit floor	54.93 cy		-		-	106.00 /cy	5,823	-	-	-	-	-	-	5,823	3,259	9,081
Struct concrete,ready mix,normal wt,4000 psi,includes local aggregate,sand,portland cement and water,delivered,excludes all additives and treatments	scale pit wall	7.97 cy		-		-	106.00 /cy	845	-	-	-	-	-	-	845	473	1,318
Struct concrete,ready mix,normal wt,4000 psi,includes local aggregate,sand,portland cement and water,delivered,excludes all additives and treatments	Sand filter SOG 11 x11x 1	4.48 cy		-		-	106.00 /cy	475	-	-	-	-	-	-	475	266	741
Struct concrete,ready mix,normal wt,4000 psi,includes local aggregate,sand,portland cement and water,delivered,excludes all additives and treatments	Concrete Walls - Sand filter 40 x 1 x 10	14.82 cy		-		-	106.00 /cy	1,570	-	-	-	-	-	-	1,570	879	2,449
Struct concrete,ready mix,normal wt,4000 psi,includes local aggregate,sand,portland cement and water,delivered,excludes all additives and treatments	Concrete SOG HEPA Filter SOG 20.25 x 19.75 x .67	8.42 cy		-		-	106.00 /cy	892	-	-	-	-	-	-	892	499	1,392
Struct concrete,ready mix,normal wt,4000 psi,includes local aggregate,sand,portland cement and water,delivered,excludes all additives and treatments	Concrete wall HEPA Filter 74 x 1.5 x 2	8.22 cy		-		-	106.00 /cy	872	-	-	-	-	-	-	872	488	1,359
Structural concrete, placing, continuous footng, shallow, direct chute, includes vibrating, excludes material	Concrete Footings 6' x 5' x 2' - 8 ea	17.78 cy	0.146 ch/cy	262.19 /ch	16	679	-	-	-	-	6.50 /ch	17	-	-	695	333	1,028
Structural concrete, placing, slab on grade, direct chute, over 6" thick, includes vibrating, excludes material	Concrete SOG Ramps 58 x 14 x 1	30.07 cy	0.106 ch/cy	262.19 /ch	19	835	-	-	-	-	6.50 /ch	21	-	-	855	409	1,265
Structural concrete, placing, slab on grade, direct chute, over 6" thick, includes vibrating, excludes material	Sand filter SOG 11 x11x 1	4.48 cy	0.106 ch/cy	262.19 /ch	3	124	-	-	-	-	6.50 /ch	3	-	-	127	61	188
Structural concrete, placing, slab on grade, direct chute, over 6" thick, includes vibrating, excludes material	Concrete SOG HEPA Filter SOG 20.25 x 19.75 x .67	8.42 cy	0.106 ch/cy	262.19 /ch	5	234	-	-	-	-	6.50 /ch	6	-	-	239	115	354
Structural concrete, placing, slab on grade, pumped, over 6" thick, includes vibrating, excludes material	Concrete SOG - Floor, Scale pit floor	54.93 cy	0.094 ch/cy	352.16 /ch	41	1,826	-	-	-	-	98.73 /ch	512	-	-	2,338	1,157	3,495
Structural concrete, placing, walls, pumped, 12" thick, includes vibrating, excludes material	Grade beam 150.75' x1.42' x 1.5'	11.89 cy	0.159 ch/cy	352.16 /ch	15	665	-	-	-	-	98.73 /ch	186	-	-	852	421	1,273
Structural concrete, placing, walls, pumped, 12" thick, includes vibrating, excludes material	Concrete Walls - 9" Retention wall on aprons	4.75 cy	0.159 ch/cy	352.16 /ch	6	266	-	-	-	-	98.73 /ch	74	-	-	340	168	508
Structural concrete, placing, walls, pumped, 12" thick, includes vibrating, excludes material	scale pit wall	7.97 cy	0.159 ch/cy	352.16 /ch	10	446	-	-	-	-	98.73 /ch	125	-	-	571	282	853
Structural concrete, placing, walls, pumped, 12" thick, includes vibrating, excludes material	Concrete Walls - Sand filter 40 x 1 x 10	14.82 cy	0.159 ch/cy	352.16 /ch	19	829	-	-	-	-	98.73 /ch	232	-	-	1,061	525	1,586
Structural concrete, placing, walls, pumped, 12" thick, includes vibrating, excludes material	Concrete wall HEPA Filter 74 x 1.5 x 2	8.22 cy	0.159 ch/cy	352.16 /ch	10	460	-	-	-	-	98.73 /ch	129	-	-	589	291	880
Concrete finishing, floors, manual screed, bull float	Concrete SOG Ramps 58 x 14 x 1	812.00 sf	0.004 ch/sf	137.99 /ch	11	490	-	-	-	-	-	-	-	-	490	233	723
Concrete finishing, floors, manual screed, bull float	Concrete SOG - Floor, Scale pit floor	1,483.16 sf	0.004 ch/sf	137.99 /ch	19	894	-	-	-	-	-	-	-	-	894	426	1,321
Concrete finishing, floors, manual screed, bull float	Sand filter SOG 11 x11x 1	121.00 sf	0.004 ch/sf	137.99 /ch	2	73	-	-	-	-	-	-	-	-	73	35	108
Concrete finishing, floors, manual screed, bull float	Concrete SOG HEPA Filter SOG 20.25 x 19.75 x .67	339.19 sf	0.004 ch/sf	137.99 /ch	4	205	-	-	-	-	-	-	-	-	205	97	302
Concrete finishing, floors, manual screed, bull float, machine float & steel trowel (walk-behind)	Concrete SOG Ramps 58 x 14 x 1	812.00 sf	0.010 ch/sf	137.99 /ch	25	1,140	-	-	-	-	5.30 /ch	44	-	-	1,183	568	1,751
Concrete finishing, floors, manual screed, bull float, machine float & steel trowel (walk-behind)	Concrete SOG - Floor, Scale pit floor	1,483.16 sf	0.010 ch/sf	137.99 /ch	45	2,081	-	-	-	-	5.30 /ch	80	-	-	2,161	1,037	3,198
Concrete finishing, floors, manual screed, bull float, machine float & steel trowel (walk-behind)	Sand filter SOG 11 x11x 1	121.00 sf	0.010 ch/sf	137.99 /ch	4	170	-	-	-	-	5.30 /ch	7	-	-	176	85	261
Concrete finishing, floors, manual screed, bull float, machine float & steel trowel (walk-behind)	Concrete SOG HEPA Filter SOG 20.25 x 19.75 x .67	339.19 sf	0.010 ch/sf	137.99 /ch	10	476	-	-	-	-	5.30 /ch	18	-	-	494	237	731
Concrete finishing, walls, includes breaking ties and patching voids	Grade beam 150.75' x1.42' x 1.5'	452.25 sf	0.032 ch/sf	47.53 /ch	15	695	0.03 /sf	14	-	-	-	-	-	-	709	339	1,048
Concrete finishing, walls, includes breaking ties and patching voids	Concrete Walls - 9" Retention wall on aprons	342.00 sf	0.032 ch/sf	47.53 /ch	11	526	0.03 /sf	10	-	-	-	-	-	-	536	256	792
Concrete finishing, walls, includes breaking ties and patching voids	scale pit wall	287.00 sf	0.032 ch/sf	47.53 /ch	9	441	0.03 /sf	9	-	-	-	-	-	-	450	215	665
Concrete finishing, walls, includes breaking ties and patching voids	Concrete Walls - Sand filter 40 x 1 x 10	800.00 sf	0.032 ch/sf	47.53 /ch	26	1,230	0.03 /sf	24	-	-	-	-	-	-	1,254	600	1,853

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS15010513 Concrete Work																	
Concrete finishing, walls, includes breaking ties and patching voids	Concrete wall HEPA Filter 74 x 1.5 x 2	296.00 sf	0.032 ch/sf	47.53 /ch	10	455	0.03 /sf	9	-	-	-	-	-	-	464	222	686
Concrete finishing, walls, grind form fins flush	Grade beam 150.75' x1.42' x 1.5'	150.75 lf	0.025 ch/lf	42.93 /ch	4	162	-	-	-	-	-	-	-	-	162	77	239
Concrete finishing, walls, grind form fins flush	Concrete Walls - 9" Retention wall on aprons	114.00 lf	0.025 ch/lf	42.93 /ch	3	122	-	-	-	-	-	-	-	-	122	58	180
Concrete finishing, walls, grind form fins flush	scale pit wall	82.00 lf	0.025 ch/lf	42.93 /ch	2	88	-	-	-	-	-	-	-	-	88	42	130
Concrete finishing, walls, grind form fins flush	Concrete Walls - Sand filter 40 x 1 x 10	40.00 lf	0.025 ch/lf	42.93 /ch	1	43	-	-	-	-	-	-	-	-	43	20	63
Concrete finishing, walls, grind form fins flush	Concrete wall HEPA Filter 74 x 1.5 x 2	74.00 lf	0.025 ch/lf	42.93 /ch	2	79	-	-	-	-	-	-	-	-	79	38	117
Concrete surface treatment, curing, sprayed membrane compound	Concrete Footings 6' x 5' x 2' - 8 ea	2.40 csf	0.184 ch/csf	85.86 /ch	1	38	5.25 /csf	13	-	-	-	-	-	-	50	25	76
Concrete surface treatment, curing, sprayed membrane compound	Grade beam 150.75' x1.42' x 1.5'	4.52 csf	0.184 ch/csf	85.86 /ch	2	71	5.25 /csf	24	-	-	-	-	-	-	95	47	142
Concrete surface treatment, curing, sprayed membrane compound	Concrete SOG Ramps .58 x 14 x 1	8.12 csf	0.184 ch/csf	85.86 /ch	3	128	5.25 /csf	43	-	-	-	-	-	-	171	85	256
Concrete surface treatment, curing, sprayed membrane compound	Concrete Walls - 9" Retention wall on aprons	3.42 csf	0.184 ch/csf	85.86 /ch	1	54	5.25 /csf	18	-	-	-	-	-	-	72	36	108
Concrete surface treatment, curing, sprayed membrane compound	Concrete SOG - Floor, Scale pit floor	14.83 csf	0.184 ch/csf	85.86 /ch	5	234	5.25 /csf	78	-	-	-	-	-	-	312	155	467
Concrete surface treatment, curing, sprayed membrane compound	scale pit wall	2.87 csf	0.184 ch/csf	85.86 /ch	1	45	5.25 /csf	15	-	-	-	-	-	-	60	30	90
Concrete surface treatment, curing, sprayed membrane compound	Sand filter SOG 11 x11x 1	1.21 csf	0.184 ch/csf	85.86 /ch	0	19	5.25 /csf	6	-	-	-	-	-	-	25	13	38
Concrete surface treatment, curing, sprayed membrane compound	Concrete Walls - Sand filter 40 x 1 x 10	8.00 csf	0.184 ch/csf	85.86 /ch	3	126	5.25 /csf	42	-	-	-	-	-	-	168	84	252
Concrete surface treatment, curing, sprayed membrane compound	Concrete SOG HEPA Filter SOG 20.25 x 19.75 x .67	3.39 csf	0.184 ch/csf	85.86 /ch	1	54	5.25 /csf	18	-	-	-	-	-	-	71	35	107
Concrete surface treatment, curing, sprayed membrane compound	Concrete wall HEPA Filter 74 x 1.5 x 2	2.96 csf	0.184 ch/csf	85.86 /ch	1	47	5.25 /csf	16	-	-	-	-	-	-	62	31	93
Fine grading, fine grade for slab on grade, machine	Concrete SOG Ramps .58 x 14 x 1	90.22 sy	0.017 ch/sy	89.98 /ch	3	136	-	-	-	-	68.78 /ch	104	-	-	240	123	364
Fine grading, fine grade for slab on grade, machine	Concrete SOG - Floor, Scale pit floor	164.80 sy	0.017 ch/sy	89.98 /ch	6	249	-	-	-	-	68.78 /ch	190	-	-	439	225	664
Fine grading, fine grade for slab on grade, machine	Sand filter SOG 11 x11x 1	13.44 sy	0.017 ch/sy	89.98 /ch	0	20	-	-	-	-	68.78 /ch	16	-	-	36	18	54
Fine grading, fine grade for slab on grade, machine	Concrete SOG HEPA Filter SOG 20.25 x 19.75 x .67	37.69 sy	0.017 ch/sy	89.98 /ch	1	57	-	-	-	-	68.78 /ch	44	-	-	100	52	152
Fine grading, fine grade for slab on grade, hand grading	Concrete SOG Ramps .58 x 14 x 1	9.02 sy	0.025 ch/sy	128.79 /ch	1	29	-	-	-	-	4.90 /ch	1	-	-	30	14	45
Fine grading, fine grade for slab on grade, hand grading	Concrete SOG - Floor, Scale pit floor	16.48 sy	0.025 ch/sy	128.79 /ch	1	53	-	-	-	-	4.90 /ch	2	-	-	55	26	81
Fine grading, fine grade for slab on grade, hand grading	Sand filter SOG 11 x11x 1	1.34 sy	0.025 ch/sy	128.79 /ch	0	4	-	-	-	-	4.90 /ch	0	-	-	4	2	7
Fine grading, fine grade for slab on grade, hand grading	Concrete SOG HEPA Filter SOG 20.25 x 19.75 x .67	3.77 sy	0.025 ch/sy	128.79 /ch	0	12	-	-	-	-	4.90 /ch	0	-	-	13	6	19
LS15010513 Concrete Work					1,627	76,176		53,546				1,811		2,354	133,888	68,412	202,299
LS15010613 Truck Scale																	
Scales, truck type, digital, electronic, steel deck, 100 ton capacity, 40' x 10' platform, incl. steel weigh bridge, excl. foundation, pits		1.00 ea	124.766 ch/ea	149.07 /ch	374	18,599	/ea	-	-	-	-	-	-	-	18,599	8,865	27,464
LS15010613 Truck Scale					374	18,599									18,599	8,865	27,464
LS15010713 Scale Access Pit																	
Column, structural tubing, heavy section, 4" to 6" square, incl shop primer, cap & base plate, bolts	support for grating scale side	600.00 lb	0.001 ch/lb	379.86 /ch	2	125	1.50 /lb	900	-	-	217.63 /ch	72	-	-	1,097	604	1,701
Railing, pipe, steel, primed, 3 rails, 3'-6" high, posts @ 5' O.C., 1-1/2" dia, shop fabricated	Both sides of scale pit	68.00 lf	0.127 ch/lf	228.62 /ch	35	1,982	44.50 /lf	3,026	-	-	16.78 /ch	145	-	-	5,153	2,720	7,873
Floor grating, steel, painted, 2-1/4" x 3/16" bearing bars @ 1-3/16" O.C., cross bars @ 2" O.C., over 300 S.F., field fabricated from panels	Both sides of scale pit	120.00 sf	0.039 ch/sf	379.86 /ch	33	1,770	24.50 /sf	2,940	-	-	217.63 /ch	1,014	-	-	5,723	3,056	8,779
Trench cover, frame only for grating, 2 sides, for 2" T grating, field fabncated	Both sides of scale pit	60.00 lf	0.499 ch/lf	57.15 /ch	30	1,711	5.40 /lf	324	-	-	-	-	-	-	2,035	997	3,032
LS15010713 Scale Access Pit					100	5,588		7,190				1,231			14,009	7,376	21,386
LS15010813 Super Structure																	
Grout, non-shrink, for column and machine bases, non-metallic, 1" deep	12 columns	12.00 sf	0.499 ch/sf	47.53 /ch	6	285	7.15 /sf	86	-	-	-	-	-	-	370	184	554
Cutting, steel, to 1/2" thick, by hand, incl prep, torch cutting & grinding, excl staging	48 lf plates + 70 lf angles =	118.00 lf	0.055 ch/lf	57.15 /ch	6	368	-	-	-	-	11.58 /ch	75	-	-	443	217	660
Drilling holes in steel for anchors, up to 1/4" deep, 3/8" diameter, incl bit & layout, excludes anchor	Base angle plate	45.00 ea	0.168 ch/ea	57.15 /ch	8	432	0.09 /ea	4	-	-	-	-	-	-	436	208	644
Drilling holes in steel for anchors, up to 1/4" deep, 1/2" diameter, incl bit & layout, excludes anchor	HEPA Filter Stack Brace	84.00 ea	0.182 ch/ea	57.15 /ch	15	873	0.10 /ea	8	-	-	-	-	-	-	882	421	1,303
Drilling holes in steel for anchors, up to 1/4" deep, 5/8" diameter, incl bit & layout, excludes anchor	HEPA Filter area	64.00 ea	0.198 ch/ea	57.15 /ch	13	726	0.13 /ea	8	-	-	-	-	-	-	734	351	1,085
Drilling holes in steel for anchors, up to 1/4" deep, 3/4" diameter, incl bit & layout, excludes anchor	Col 1 - 2 & A - D	336.00 ea	0.218 ch/ea	57.15 /ch	73	4,193	0.15 /ea	50	-	-	-	-	-	-	4,243	2,027	6,270
Drilling holes in steel for anchors, 3/4" diameter, incl bit & layout, excludes anchor, for each additional 1/4" depth, add	Col 1 - 2 & A - D	672.00 ea	0.073 ch/ea	57.15 /ch	49	2,795	0.15 /ea	101	-	-	-	-	-	-	2,896	1,389	4,284
Welding structural steel in field, single pass, 0.3 Lb/LF, 1/4" thick, continuous fillet, type 6011	HEPA Filter area & stack brracing	200.00 lf	0.349 ch/lf	57.15 /ch	70	3,993	0.71 /lf	142	-	-	16.78 /ch	1,172	-	-	5,307	2,639	7,946
Welding structural steel in field, 3 passes, 0.5 Lb/LF, 3/8" thick, continuous fillet, type 6011	40 lf plates + 166 lf connection angles	214.00 lf	0.582 ch/lf	57.15 /ch	125	7,121	1.18 /lf	253	-	-	16.78 /ch	2,090	-	-	9,464	4,706	14,170
Bolt, hex head, plain steel, 1/2" dia x 2" L, A307, incl nut & washer	HEPA Filter Stack Brace	84.00 ea	0.146 ch/ea	57.15 /ch	12	699	0.52 /ea	44	-	-	-	-	-	-	743	358	1,100
Bolt, hex head, plain steel, 5/8" dia x 2" L, A307, incl nut & washer	HEPA Filter area	64.00 ea	0.146 ch/ea	57.15 /ch	9	532	1.18 /ea	76	-	-	-	-	-	-	608	296	904
Bolt, hex head, plain steel, 3/4" dia x 4" L, A307, incl nut & washer	21 x 8, 42 x 4	336.00 ea	0.159 ch/ea	57.15 /ch	53	3,050	2.17 /ea	729	-	-	-	-	-	-	3,779	1,862	5,640
Wedge anchor, carbon steel, 3/8" dia x 2-1/4" L, in concrete, brick or stone, excl layout & drilling	Base angle plate line Col 1-2 & A-d	30.00 ea	0.120 ch/ea	49.69 /ch	4	180	0.32 /ea	10	-	-	-	-	-	-	189	91	280
Wedge anchor, carbon steel, 3/8" dia x 2-1/4" L, in concrete, brick or stone, excl layout & drilling	Base angle plate HEPA Filter Area	15.00 ea	0.120 ch/ea	49.69 /ch	2	90	0.32 /ea	5	-	-	-	-	-	-	95	45	140
Angle framing, structural steel, 3"x2"x3/8", field fabncated, incl cutting & welding	Angles for connections assume 2 8" angles per connection	110.00 lf	0.269 ch/lf	171.46 /ch	89	5,068	5.30 /lf	583	-	-	16.78 /ch	496	-	-	6,147	3,020	9,167
Angle framing, structural steel, 3"x3"x3/8", field fabricated, incl cutting & welding		90.00 lf	0.306 ch/lf	171.46 /ch	83	4,729	6.50 /lf	585	-	-	16.78 /ch	463	-	-	5,777	2,840	8,617
Angle framing, structural steel, 3"x3"x3/8", field fabncated, incl cutting & welding	Col 1 - 2 & A - D	92.00 lf	0.306 ch/lf	171.46 /ch	85	4,834	6.50 /lf	598	-	-	16.78 /ch	473	-	-	5,905	2,903	8,808
Angle framing, structural steel, 3"x3"x3/8", field fabricated, incl cutting & welding	Base angle plate line Col 1-2 & A-d	130.00 lf	0.306 ch/lf	171.46 /ch	120	6,831	6.50 /lf	845	-	-	16.78 /ch	668	-	-	8,344	4,103	12,447
Angle framing, structural steel, 3"x3"x3/8", field fabricated, incl cutting & welding	Base plate HEPA Filter area	60.00 lf	0.306 ch/lf	171.46 /ch	55	3,153	6.50 /lf	390	-	-	16.78 /ch	308	-	-	3,851	1,894	5,745
Angle framing, structural steel, 3"x3"x3/8", field fabncated, incl cutting & welding	Stsck Bracing HEPA Filter area 16' - 2 ea cols	280.00 lf	0.306 ch/lf	171.46 /ch	257	14,712	6.50 /lf	1,820	-	-	16.78 /ch	1,439	-	-	17,971	8,837	26,808
Channel framing, structural steel, field fabricated, C8x11.5, incl cutting & welding	Col 1 - 2 & A - D	201.00 lf	0.485 ch/lf	171.46 /ch	293	16,722	10.35 /lf	2,080	-	-	16.78 /ch	1,636	-	-	20,438	10,050	30,488
Channel framing, structural steel, field fabricated, C8x11.5, incl cutting & welding	Col 1 - 2 & A - D	24.00 lf	0.485 ch/lf	171.46 /ch	35	1,997	10.35 /lf	248	-	-	16.78 /ch	195	-	-	2,440	1,200	3,640
Channel framing, structural steel, field fabricated, C8x11.5, incl cutting & welding	Col 1 - 2 & A - D	48.00 lf	0.485 ch/lf	171.46 /ch	70	3,993	10.35 /lf	497	-	-	16.78 /ch	391	-	-	4,881	2,400	7,281
Channel framing, structural steel, field fabricated, C8x11.5, incl cutting & welding	Col 1 - 2 & A - D	56.00 lf	0.485 ch/lf	171.46 /ch	82	4,659	10.35 /lf	580	-	-	16.78 /ch	456	-	-	5,694	2,800	8,494

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS15010813 Super Structure																	
Channel framing, structural steel, field fabricated, C8x11.5, incl cutting & welding	Platform Elev.18'-0" (10 x 16)	48.00 lf	0.485 ch/lf	171.46 /ch	70	3,993	10.35 /lf	497	-	-	16.78 /ch	391	-	-	4,881	2,400	7,281
Channel framing, structural steel, field fabricated, C8x11.5, incl cutting & welding	HEPA Filter area	60.00 lf	0.485 ch/lf	171.46 /ch	87	4,992	10.35 /lf	621	-	-	16.78 /ch	488	-	-	6,101	3,000	9,101
Channel framing, structural steel, field fabricated, C8x11.5, incl cutting & welding	HEPA Filter Stack Brace	120.00 lf	0.485 ch/lf	171.46 /ch	175	9,983	10.35 /lf	1,242	-	-	16.78 /ch	977	-	-	12,202	6,000	18,202
Steel plate, structural, for connections & stiffeners, 3/8" T, shop fabricated, incl shop primer	Base plates, end plates	24.00 sf		-		-	23.00 /sf	552	-	-	-	-	-	-	552	309	861
Steel plate, structural, for connections & stiffeners, 1/2" T, shop fabricated, incl shop primer	Base plates, end plates	16.00 sf		-		-	30.50 /sf	488	-	-	-	-	-	-	488	273	761
Steel plate, structural, for connections & stiffeners, 2"T, shop fabricated, incl shop primer	Shielding Plate for decant pump & valve box	96.00 sf		-		-	122.00 /sf	11,712	-	-	-	-	-	-	11,712	6,555	18,267
Structural steel member, 100-ton project, 1 to 2 story building, W8x24, A992 steel, shop fabricated, incl shop primer, bolted connections	Col 1 - 2 & A - D	201.00 lf	0.032 ch/lf	379.86 /ch	45	2,426	39.50 /lf	7,940	-	-	217.63 /ch	1,390	-	-	11,755	6,377	18,132
MC 12x31, A992 steel, shop fabricated, incl shop primer, bolted connections	Col 1 - 2 & A - D	166.00 lf	0.032 ch/lf	379.86 /ch	37	2,003	51.00 /lf	8,466	-	-	217.63 /ch	1,148	-	-	11,617	6,335	17,952
Structural steel member, 100-ton project, 1 to 2 story building, W10x15, A992 steel, shop fabricated, incl shop primer, bolted connections	Platform Elev.18'-0" (10 x 16)	20.00 lf	0.029 ch/lf	379.86 /ch	4	221	25.00 /lf	500	-	-	217.63 /ch	127	-	-	848	456	1,304
Structural steel member, 100-ton project, 1 to 2 story building, W10x15, A992 steel, shop fabricated, incl shop primer, bolted connections	Col 1 - 2 & A - D	150.75 lf	0.029 ch/lf	379.86 /ch	31	1,666	25.00 /lf	3,769	-	-	217.63 /ch	955	-	-	6,390	3,438	9,828
Structural steel member, 100-ton project, 1 to 2 story building, W10x15, A992 steel, shop fabricated, incl shop primer, bolted connections	HEPA Filter area	60.00 lf	0.029 ch/lf	379.86 /ch	12	663	25.00 /lf	1,500	-	-	217.63 /ch	380	-	-	2,543	1,368	3,911
Structural steel member, 100-ton project, 1 to 2 story building, W10x22, A992 steel, shop fabricated, incl shop primer, bolted connections	Col 1 - 2 & A - D	100.50 lf	0.029 ch/lf	379.86 /ch	20	1,111	36.50 /lf	3,668	-	-	217.63 /ch	636	-	-	5,416	2,939	8,354
Structural steel member, 100-ton project, 1 to 2 story building, W12x58, A992 steel, shop fabricated, incl shop primer, bolted connections	Col 1 - 2 & A - D	100.00 lf	0.023 ch/lf	379.86 /ch	16	885	95.50 /lf	9,550	-	-	217.63 /ch	507	-	-	10,942	6,050	16,992
Structural steel member, 100-ton project, 1 to 2 story building, W18x76, A992 steel, shop fabricated, incl shop primer, bolted connections	Main columns Col 1 - 2 & A - D	226.00 lf	0.019 ch/lf	551.32 /ch	44	2,418	125.00 /lf	28,250	-	-	234.40 /ch	1,028	-	-	31,697	17,538	49,235
Structural steel member, 100-ton project, 1 to 2 story building, W18x76, A992 steel, shop fabricated, incl shop primer, bolted connections	Col 1 - 2 & A - D	46.00 lf	0.019 ch/lf	551.32 /ch	9	492	125.00 /lf	5,750	-	-	234.40 /ch	209	-	-	6,452	3,570	10,021
Structural steel member, 100-ton project, 1 to 2 story building, W18x76, A992 steel, shop fabricated, incl shop primer, bolted connections	4 ea HEPA Filter columns	74.00 lf	0.019 ch/lf	551.32 /ch	14	792	125.00 /lf	9,250	-	-	234.40 /ch	337	-	-	10,379	5,743	16,121
Metal decking, steel, open type, wide rib, galvanized, under 50 Sq, 1-1/2" D, 20 ga	HEPA Filter area Exhaust Filter Housing	415.00 sf	0.005 ch/sf	228.62 /ch	8	429	3.03 /sf	1,257	-	-	16.78 /ch	31	-	-	1,718	926	2,644
Metal decking, steel, open type, wide rib, galvanized, under 50 Sq, 1-1/2" D, 20 ga	Col 1 - 2 & A - D	1,354.01 sf	0.005 ch/sf	228.62 /ch	24	1,399	3.03 /sf	4,103	-	-	16.78 /ch	103	-	-	5,604	3,020	8,625
Ladder, shop fabricated, steel, 20" W, bolted to concrete, incl cage	HEPA Filter area	10.00 vlf	0.349 ch/vlf	228.62 /ch	14	799	78.50 /vlf	785	-	-	16.78 /ch	59	-	-	1,642	853	2,495
Ladder, shop fabricated, steel, 20" W, bolted to concrete, incl cage	Platform Elev.18'-0" (10 x 16)	18.00 vlf	0.349 ch/vlf	228.62 /ch	25	1,438	78.50 /vlf	1,413	-	-	16.78 /ch	105	-	-	2,956	1,535	4,491
Ladder, shop fabricated, steel, 20" W, bolted to concrete, incl cage	Col 1 - 2 & A - D	30.00 vlf	0.349 ch/vlf	228.62 /ch	42	2,396	78.50 /vlf	2,355	-	-	16.78 /ch	176	-	-	4,927	2,558	7,485
Railing, pipe, steel, primed, 3 rails, 3'-6" high, posts @ 5' O.C., 1-1/2" dia, shop fabricated	Out sides of Platform Elev.18'-0"	36.00 lf	0.127 ch/lf	228.62 /ch	18	1,049	44.50 /lf	1,602	-	-	16.78 /ch	77	-	-	2,728	1,440	4,168
Floor grating, steel, painted, 1-1/4" x 3/16" bearing bars @ 1-3/16" O.C., cross bars @ 2" O.C., up to 300 S.F., field fabricated from panels	Platform Elev.18'-0" (10 x 16)	300.00 sf	0.044 ch/sf	379.86 /ch	92	4,977	17.85 /sf	5,355	-	-	217.63 /ch	2,851	-	-	13,183	6,965	20,147
Steel Siding, colored, corrugated or ribbed, on steel frame, 10 year finish, 20 gauge, incl. fasteners	HEPA Filter area 2 sides	380.00 sf	0.022 ch/sf	204.36 /ch	34	1,728	2.90 /sf	1,102	-	-	-	-	-	-	2,830	1,440	4,270
Steel Siding, colored, corrugated or ribbed, on steel frame, 10 year finish, 20 gauge, incl. fasteners	Col 1 - 2 & A - D	1,610.87 sf	0.022 ch/sf	204.36 /ch	143	7,325	2.90 /sf	4,672	-	-	-	-	-	-	11,996	6,106	18,102
Sheet metal flashing, steel sheets, flexible, galvanized, 20 gauge, including up to 4 bends		100.00 sf	0.134 ch/sf	45.81 /ch	13	616	1.19 /sf	119	-	-	-	-	-	-	735	360	1,095
Reglet, counter flashing for galvanized steel, .020" thick, 12 wide		60.00 lf	0.116 ch/lf	59.25 /ch	7	414	0.85 /lf	51	-	-	-	-	-	-	465	226	691
Roof Hatches, with curb, 1" fiberglass insulation, galvanized steel curb & aluminum cover, 2' 6" x 3' 0"		2.00 ea	1.747 ch/ea	204.36 /ch	14	714	595.00 /ea	1,190	-	-	-	-	-	-	1,904	1,006	2,910
Steel Bldg Access., corner or eave, galvanized, 26 gauge		200.00 lf	0.073 ch/lf	114.31 /ch	29	1,664	4.12 /lf	824	-	-	-	-	-	-	2,488	1,254	3,742
Pre-Eng. Steel Bldg., insulation, vinyl/scrim/metalized polyester (VRP) faced, rated .6 lb density, 6" thick, R-19		2,000.00 sf	0.008 ch/sf	99.38 /ch	30	1,511	0.60 /sf	1,200	-	-	-	-	-	-	2,711	1,392	4,102
Pre-Eng. Steel Bldg., insulation, vinyl/scrim/metalized polyester (VRP) faced, with steel banding, rated .6 lb density, 10" thick, R-30		1,694.00 sf	0.008 ch/sf	99.38 /ch	26	1,279	1.08 /sf	1,830	-	-	-	-	-	-	3,109	1,634	4,743
Vent chimney, prefabricated metal, gas, double wall, galvanized steel fitting, roof flashing, 14" diameter, U.L. listed	HEPA Stack	1.00 ea	0.873 ch/ea	118.50 /ch	2	103	124.00 /ea	124	-	-	-	-	-	-	227	119	346
LS15010813 Super Structure					2,698	151,520		131,477				21,836			304,833	158,023	462,855
LS15010913 HVAC																	
Pipe, steel, galvanized, welded, 12" diameter, schedule 40, Spec. A-53,		30.00 lf	0.919 ch/lf	215.91 /ch	83	5,955	80.50 /lf	2,415	-	-	6.96 /ch	192	-	-	8,562	4,297	12,859
Pipe, steel, galvanized, welded, 14" diameter, schedule 40, Spec. A-53,		11.00 lf	1.164 ch/lf	215.91 /ch	38	2,766	91.00 /lf	1,001	-	-	6.96 /ch	89	-	-	3,856	1,928	5,784
Gasket and bolt set, for flanges. 150 lb., 1/2" pipe size		4.00 ea	0.873 ch/ea	71.97 /ch	3	251	2.16 /ea	9	-	-	-	-	-	-	260	125	385
Pipe, stainless steel, welded, 1/2" pipe size, schedule 40, type 304, includes weld joint and clevis type hangers 10' OC		50.00 lf	0.148 ch/lf	143.94 /ch	15	1,065	5.80 /lf	290	-	-	6.96 /ch	52	-	-	1,407	699	2,106
Elbow, 90 Deg., stainless steel, socket weld, 3000 lb., 1/2", type 304, includes the weld machine		8.00 ea	1.431 ch/ea	143.94 /ch	23	1,647	56.50 /ea	452	-	-	6.96 /ch	80	-	-	2,179	1,083	3,262
Elbow, 45 Deg., stainless steel, socket weld, 3000 lb., 1/2", type 304, includes the weld machine		2.00 ea	1.431 ch/ea	143.94 /ch	6	412	78.50 /ea	157	-	-	6.96 /ch	20	-	-	589	295	884
Tee, stainless steel, socket weld, 3000 lb., 1/2", type 304, includes the weld machine		2.00 ea	2.148 ch/ea	143.94 /ch	9	619	81.00 /ea	162	-	-	6.96 /ch	30	-	-	810	402	1,213
Diffusers, registers or grills, up thru 20" max dimension, selective demolition		7.00 ea	0.349 ch/ea	59.25 /ch	2	145	-	-	-	-	-	-	-	-	145	69	214
Valves, stainless steel, ball, threaded, 1/4"		50.00 ea	0.728 ch/ea	71.97 /ch	36	2,619	40.50 /ea	2,025	-	-	-	-	-	-	4,644	2,382	7,026
Pump, circulating, bronze, heated or chilled water application, in line, flanged joints, 1 H.P., 3" size		1.00 ea	4.367 ch/ea	143.94 /ch	9	629	3,175.00 /ea	3,175	-	-	-	-	-	-	3,804	2,076	5,880
Metal ductwork,fabrictd rectngir.galv steel,200 500lb, includes fittings,joints,supports and allowance for a flexible connection.excludes insulation	Metal Ductwork, fabricated rectangular, galvanized steel, 200 to 500 lb., includes fittings, joints, supports and allowance for a flexible connection, excludes insulation	900.00 lb	0.071 ch/lb	177.75 /ch	192	11,404	0.99 /lb	891	-	-	-	-	-	-	12,295	5,935	18,230
Duct accessories, multi-blade dampers, opposed blade, 16" x 10"		2.00 ea	0.970 ch/ea	59.25 /ch	2	115	29.00 /ea	58	-	-	-	-	-	-	173	87	260
Fans, industrial exhauster, 4000 CFM, 7-1/2 H.P.		1.00 ea	9.704 ch/ea	148.30 /ch	24	1,439	4,350.00 /ea	4,350	-	-	-	-	-	-	5,789	3,120	8,910
Heat Exchanger, heat pipe type, glycol, 50% efficient, 620 MBH, 4000 CFM		1.00 ea	43.668 ch/ea	71.97 /ch	44	3,143	7,225.00 /ea	7,225	-	-	-	-	-	-	10,368	5,541	15,909
Air handling unit, built-up, rooftop, with cooling/heating coil section, filters, mixing box, constant volume, single zone, 5000 CFM		1.00 ea	22.110 ch/ea	215.91 /ch	66	4,774	9,400.00 /ea	9,400	-	-	-	-	-	-	14,174	7,536	21,710
Heat pump,air air split system,15 ton cooling,64 mbh heat @ 0degf,includs outside cndnsng unit only,excluds intrcnn tubing,curbs,pads and ductwork	Heat pump, air to air split system, 15 ton cooling, 64 MBH heat @ 0Deg.F, includes	1.00 ea	34.935 ch/ea	215.91 /ch	105	7,543	10,200.00 /ea	10,200	-	-	-	-	-	-	17,743	9,304	27,046

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS15010913 HVAC																	
Heat pump,air air split system,15 ton cooling,64 mbh heat @ 0degf,includs outside cndnsng unit only,excluds intrcnn tubing,curbs,pads and ductwork	outside condensing unit only, excludes interconnecting tubing, curbs, pads and ductwork	1.00 ea	34.935 ch/ea	215.91 /ch	105	7,543	10,200.00 /ea	10,200	-	-	-	-	-	-	17,743	9,304	27,046
Hepa Filtration Exhauster 2,000cfm	Quote from Premier Technology, inc $613 K january 29,,2004. cost esclated 4% per year to 2008 $ Note: Skid mount selfcontained unit.	2.00 ea	87.336 ch/ea	287.88 /ch	699	50,285	745,837.00 /ea	1,491,674	-	-	-	-	-	-	1,541,959	858,781	2,400,740
LS15010913 HVAC					1,356	94,811		1,533,484				462			1,628,757	903,661	2,532,418
LS15011013 Electrical																	
Relocate existing Rack	Anticipate additional conduit and wire	1.00 ea	87.336 ch/ea	142.74 /ch	218	12,466	5,000.00 /ea	5,000	-	-	16.14 /ch	1,409	-	-	18,875	9,529	28,404
Wire connector, screw type, #18 to #12	Glycol pump	6.00 ea	0.073 ch/ea	59.61 /ch	0	26	0.10 /ea	1	-	-	-	-	-	-	27	13	39
Wire connector, screw type, #18 to #12	Crain hoist,trolley, bridger motors 1 & 2	24.00 ea	0.073 ch/ea	59.61 /ch	2	104	0.10 /ea	2	-	-	-	-	-	-	107	51	157
Wire connector, screw type, #18 to #12	Lighting	18.00 ea	0.073 ch/ea	59.61 /ch	1	78	0.10 /ea	2	-	-	-	-	-	-	80	38	118
Wire connector, screw type, insulated, #18 to #12	I & C power supply	6.00 ea	0.073 ch/ea	59.61 /ch	0	26	0.11 /ea	1	-	-	-	-	-	-	27	13	39
Wire connector, screw type, insulated, #18 to #12	Roll up Door #1	6.00 ea	0.073 ch/ea	59.61 /ch	0	26	0.11 /ea	1	-	-	-	-	-	-	27	13	39
Wire connector, screw type, insulated, #18 to #12	Roll up Door #2	6.00 ea	0.073 ch/ea	59.61 /ch	0	26	0.11 /ea	1	-	-	-	-	-	-	27	13	39
Wire connector, screw type, insulated, #18 to #12	EF-1	6.00 ea	0.073 ch/ea	59.61 /ch	0	26	0.11 /ea	1	-	-	-	-	-	-	27	13	39
Wire connector, screw type, insulated, #18 to #12	EF-2	6.00 ea	0.073 ch/ea	59.61 /ch	0	26	0.11 /ea	1	-	-	-	-	-	-	27	13	39
Wire connector, screw type, insulated, #16 to #10	Supply Fan	6.00 ea	0.076 ch/ea	59.61 /ch	0	27	0.14 /ea	1	-	-	-	-	-	-	28	13	41
Terminal lugs, solderless, #8 to #4	Wire, Conduit, Pull boxes & Terminations Decant pump	6.00 ea	0.582 ch/ea	59.61 /ch	3	208	0.87 /ea	5	-	-	-	-	-	-	213	102	316
Terminal lugs, solderless, #2 to #1	HP-1	6.00 ea	0.794 ch/ea	59.61 /ch	5	284	1.17 /ea	7	-	-	-	-	-	-	291	139	430
Terminal lugs, solderless, 3/0	Power feed to panel PP-105KW-12	6.00 ea	1.456 ch/ea	59.61 /ch	9	521	4.00 /ea	24	-	-	-	-	-	-	545	262	806
Wire, copper, solid, 600 volt, #12, type THWN-THHN, in raceway	I & C power supply	1.05 clf	1.588 ch/clf	59.61 /ch	2	99	15.90 /clf	17	-	-	-	-	-	-	116	57	173
Wire, copper, solid, 600 volt, #12, type THWN-THHN, in raceway	Roll up Door #1	2.25 clf	1.588 ch/clf	59.61 /ch	4	213	15.90 /clf	36	-	-	-	-	-	-	249	122	370
Wire, copper, solid, 600 volt, #12, type THWN-THHN, in raceway	Roll up Door #2	1.65 clf	1.588 ch/clf	59.61 /ch	3	156	15.90 /clf	26	-	-	-	-	-	-	182	89	272
Wire, copper, solid, 600 volt, #12, type THWN-THHN, in raceway	EF-1	1.35 clf	1.588 ch/clf	59.61 /ch	2	128	15.90 /clf	21	-	-	-	-	-	-	149	73	222
Wire, copper, solid, 600 volt, #12, type THWN-THHN, in raceway	Glycol pump	2.25 clf	1.588 ch/clf	59.61 /ch	4	213	15.90 /clf	36	-	-	-	-	-	-	249	122	370
Wire, copper, solid, 600 volt, #12, type THWN-THHN, in raceway	Crain hoist,trolley, bridger motors 1 & 2	11.40 clf	1.588 ch/clf	59.61 /ch	18	1,079	15.90 /clf	181	-	-	-	-	-	-	1,260	616	1,876
Wire, copper, solid, 600 volt, #12, type THWN-THHN, in raceway	Lighting	18.45 clf	1.588 ch/clf	59.61 /ch	29	1,746	15.90 /clf	293	-	-	-	-	-	-	2,040	997	3,036
Wire, copper, solid, 600 volt, #10, type THWN-THHN, in raceway	Supply Fan	1.95 clf	1.747 ch/clf	59.61 /ch	3	203	25.00 /clf	49	-	-	-	-	-	-	252	124	376
Wire, copper, stranded, 600 volt, #12, type THWN-THHN, in raceway	EF-2	1.65 clf	1.588 ch/clf	59.61 /ch	3	156	16.25 /clf	27	-	-	-	-	-	-	183	89	272
Wire, copper, stranded, 600 volt, #6, type THWN-THHN, in raceway	Wire, Conduit, Pull boxes & Terminations Decant pump	1.20 clf	2.687 ch/clf	59.61 /ch	3	192	67.50 /clf	81	-	-	-	-	-	-	273	137	410
Wire, copper, stranded, 600 volt, #2, type THWN-THHN, in raceway	HP-1	1.95 clf	1.941 ch/clf	119.21 /ch	8	451	168.00 /clf	328	-	-	-	-	-	-	779	398	1,177
Wire, copper, stranded, 600 volt, 3/0, type THWN-THHN, in raceway	Power feed to panel PP-105KW-12	3.15 clf	3.493 ch/clf	119.21 /ch	22	1,312	410.00 /clf	1,292	-	-	-	-	-	-	2,603	1,348	3,951
Grounding rod, copper clad, 8' long, 3/4" diameter	Building grounding	8.00 ea	3.296 ch/ea	59.61 /ch	26	1,572	27.50 /ea	220	-	-	-	-	-	-	1,792	872	2,664
Grounding coupling, bronze, 3/4" diameter	Building grounding	8.00 ea			-	-	14.05 /ea	112	-	-	-	-	-	-	112	63	175
Grounding drive studs, 3/4" diameter	Building grounding	8.00 ea			-	-	10.80 /ea	86	-	-	-	-	-	-	86	48	135
Ground clamp, bronze, 3/4" diameter	Building grounding	8.00 ea	0.546 ch/ea	59.61 /ch	4	260	6.70 /ea	54	-	-	-	-	-	-	314	154	468
Ground wire, copper wire, bare solid, #2	Building grounding	1.80 clf	3.493 ch/clf	59.61 /ch	6	375	163.00 /clf	293	-	-	-	-	-	-	668	343	1,011
Exothermic weld, 4/0 wire to 1" ground rod	Building grounding	1.00 ea	2.495 ch/ea	59.61 /ch	2	149	11.45 /ea	11	-	-	-	-	-	-	160	77	238
Grounding connection, brazed, #6 wire	Building grounding	8.00 ea	1.456 ch/ea	59.61 /ch	12	694	13.45 /ea	108	-	-	-	-	-	-	802	391	1,193
Copper Electrolytic ground rod system, straight vertical type, 2" diameter, 8.5' long, incl clamp connection	Building grounding	1.00 ea	6.542 ch/ea	59.61 /ch	7	390	685.00 /ea	685	-	-	-	-	-	-	1,075	569	1,644
Protective boxes at grade level, round, plastic, 12" long, incl breather slots	Building grounding	1.00 ea	0.546 ch/ea	59.61 /ch	1	33	45.00 /ea	45	-	-	-	-	-	-	78	41	118
Bentonite clay, 50# bag, 1 per 10' of rod	Building grounding	1.00 ea		-		-	38.00 /ea	38	-	-	-	-	-	-	38	21	59
Rigid galvanized steel conduit, 3/4" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	Supply Fan	60.00 lf	0.218 ch/lf	59.61 /ch	13	781	3.23 /lf	194	-	-	-	-	-	-	975	481	1,455
Rigid galvanized steel conduit, 3/4" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	I & C power supply	30.00 lf	0.218 ch/lf	59.61 /ch	7	390	3.23 /lf	97	-	-	-	-	-	-	487	240	728
Rigid galvanized steel conduit, 3/4" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	Roll up Door #1	70.00 lf	0.218 ch/lf	59.61 /ch	15	911	3.23 /lf	226	-	-	-	-	-	-	1,137	561	1,698
Rigid galvanized steel conduit, 3/4" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	Roll up Door #2	50.00 lf	0.218 ch/lf	59.61 /ch	11	651	3.23 /lf	162	-	-	-	-	-	-	812	401	1,213
Rigid galvanized steel conduit, 3/4" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	EF-1	40.00 lf	0.218 ch/lf	59.61 /ch	9	521	3.23 /lf	129	-	-	-	-	-	-	650	320	970
Rigid galvanized steel conduit, 3/4" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	EF-2	50.00 lf	0.218 ch/lf	59.61 /ch	11	651	3.23 /lf	162	-	-	-	-	-	-	812	401	1,213
Rigid galvanized steel conduit, 3/4" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	Glycol pump	70.00 lf	0.218 ch/lf	59.61 /ch	15	911	3.23 /lf	226	-	-	-	-	-	-	1,137	561	1,698
Rigid galvanized steel conduit, 3/4" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	Lighting	200.00 lf	0.218 ch/lf	59.61 /ch	44	2,603	3.23 /lf	646	-	-	-	-	-	-	3,249	1,602	4,851
Rigid galvanized steel conduit, 1" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	Wire, Conduit, Pull boxes & Terminations Decant pump	35.00 lf	0.269 ch/lf	59.61 /ch	9	561	4.44 /lf	155	-	-	-	-	-	-	716	354	1,070
Rigid galvanized steel conduit, 1" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	Crain hoist,trolley, bridger motors 1 & 2	90.00 lf	0.269 ch/lf	59.61 /ch	24	1,442	4.44 /lf	400	-	-	-	-	-	-	1,841	911	2,752
Rigid galvanized steel conduit, 1-1/4" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	HP-1	60.00 lf	0.291 ch/lf	59.61 /ch	17	1,041	6.15 /lf	369	-	-	-	-	-	-	1,410	703	2,113
Rigid galvanized steel conduit, 2" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	Power feed to panel PP-105KW-12	100.00 lf	0.388 ch/lf	59.61 /ch	39	2,314	9.25 /lf	925	-	-	-	-	-	-	3,239	1,621	4,859
Pull boxes, sheet metal, type SC, raintight & weatherproof, 6" L x 6" W x 6" D, NEMA 3R	Supply Fan	1.20 ea	1.747 ch/ea	59.61 /ch	2	125	21.50 /ea	26	-	-	-	-	-	-	151	74	225
Pull boxes, sheet metal, type SC, raintight & weatherproof, 6" L x 6" W x 6" D, NEMA 3R	I & C power supply	0.60 ea	1.747 ch/ea	59.61 /ch	1	62	21.50 /ea	13	-	-	-	-	-	-	75	37	112
Pull boxes, sheet metal, type SC, raintight & weatherproof, 6" L x 6" W x 6" D, NEMA 3R	Roll up Door #1	1.40 ea	1.747 ch/ea	59.61 /ch	2	146	21.50 /ea	30	-	-	-	-	-	-	176	86	262
Pull boxes, sheet metal, type SC, raintight & weatherproof, 6" L x 6" W x 6" D, NEMA 3R	Roll up Door #2	1.00 ea	1.747 ch/ea	59.61 /ch	2	104	21.50 /ea	22	-	-	-	-	-	-	126	62	187
Pull boxes, sheet metal, type SC, raintight & weatherproof, 6" L x 6" W x 6" D, NEMA 3R	EF-1	0.80 ea	1.747 ch/ea	59.61 /ch	1	83	21.50 /ea	17	-	-	-	-	-	-	100	49	150
Pull boxes, sheet metal, type SC, raintight & weatherproof, 6" L x 6" W x 6" D, NEMA 3R	EF-2	1.00 ea	1.747 ch/ea	59.61 /ch	2	104	21.50 /ea	22	-	-	-	-	-	-	126	62	187
Pull boxes, sheet metal, type SC, raintight & weatherproof, 6" L x 6" W x 6" D, NEMA 3R	Glycol pump	1.40 ea	1.747 ch/ea	59.61 /ch	2	146	21.50 /ea	30	-	-	-	-	-	-	176	86	262
Pull boxes, sheet metal, type SC, raintight & weatherproof, 6" L x 6" W x 6" D, NEMA 3R	Crain hoist,trolley, bridger motors 1 & 2	1.80 ea	1.747 ch/ea	59.61 /ch	3	187	21.50 /ea	39	-	-	-	-	-	-	226	111	337

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS15011013 Electrical																	
Pull boxes, sheet metal, type SC, raintight & weatherproof, 6" L x 6" W x 6" D, NEMA 3R	Lighting	4.00 ea	1.747 ch/ea	59.61 /ch	7	416	21.50 /ea	86	-	-	-	-	-	-	502	247	749
Pull boxes, sheet metal, type SC, raintight & weatherproof, 8" L x 6" W x 6" D, NEMA 3R	HP-1	1.20 ea	2.183 ch/ea	59.61 /ch	3	156	27.00 /ea	32	-	-	-	-	-	-	189	93	281
Pull boxes, sheet metal, type SC, raintight & weatherproof, 12" L x 12" W x 6" D, NEMA 3R	Wire, Conduit, Pull boxes & Terminations Decant pump	0.70 ea	3.493 ch/ea	59.61 /ch	2	146	51.00 /ea	36	-	-	-	-	-	-	181	89	271
Pull boxes, sheet metal, type SC, raintight & weatherproof, 16" L x 16" W x 6" D, NEMA 3R	Power feed to panel PP-105KW-12	2.00 ea	3.882 ch/ea	59.61 /ch	8	463	101.00 /ea	202	-	-	-	-	-	-	665	334	998
Knockouts, metal boxes & enclosures, with hole saw, 3/4" pipe size, to 8' high	Supply Fan	2.40 ea	0.372 ch/ea	59.61 /ch	1	53	-	-	-	-	-	-	-	-	53	25	79
Knockouts, metal boxes & enclosures, with hole saw, 3/4" pipe size, to 8' high	I & C power supply	1.20 ea	0.372 ch/ea	59.61 /ch	0	27	-	-	-	-	-	-	-	-	27	13	39
Knockouts, metal boxes & enclosures, with hole saw, 3/4" pipe size, to 8' high	Roll up Door #1	2.80 ea	0.372 ch/ea	59.61 /ch	1	62	-	-	-	-	-	-	-	-	62	30	92
Knockouts, metal boxes & enclosures, with hole saw, 3/4" pipe size, to 8' high	Roll up Door #2	2.00 ea	0.372 ch/ea	59.61 /ch	1	44	-	-	-	-	-	-	-	-	44	21	65
Knockouts, metal boxes & enclosures, with hole saw, 3/4" pipe size, to 8' high	EF-1	1.60 ea	0.372 ch/ea	59.61 /ch	1	35	-	-	-	-	-	-	-	-	35	17	52
Knockouts, metal boxes & enclosures, with hole saw, 3/4" pipe size, to 8' high	EF-2	2.00 ea	0.372 ch/ea	59.61 /ch	1	44	-	-	-	-	-	-	-	-	44	21	65
Knockouts, metal boxes & enclosures, with hole saw, 3/4" pipe size, to 8' high	Glycol pump	2.80 ea	0.372 ch/ea	59.61 /ch	1	62	-	-	-	-	-	-	-	-	62	30	92
Knockouts, metal boxes & enclosures, with hole saw, 3/4" pipe size, to 8' high	Lighting	8.00 ea	0.372 ch/ea	59.61 /ch	3	177	-	-	-	-	-	-	-	-	177	84	262
Knockouts, metal boxes & enclosures, with hole saw, 1" pipe size, to 8' high	Wire, Conduit, Pull boxes & Terminations Decant pump	1.40 ea	0.437 ch/ea	59.61 /ch	1	36	-	-	-	-	-	-	-	-	36	17	54
Knockouts, metal boxes & enclosures, with hole saw, 1" pipe size, to 8' high	Crain hoist,trolley, bridger motors 1 & 2	3.60 ea	0.437 ch/ea	59.61 /ch	2	94	-	-	-	-	-	-	-	-	94	45	138
Knockouts, metal boxes & enclosures, with hole saw, 1-1/4" pipe size, to 8' high	HP-1	2.40 ea	0.485 ch/ea	59.61 /ch	1	69	-	-	-	-	-	-	-	-	69	33	103
Knockouts, metal boxes & enclosures, with hand punch set, 2" pipe size, to 8' high	Power feed to panel PP-105KW-12	4.00 ea	0.873 ch/ea	59.61 /ch	3	208	-	-	-	-	-	-	-	-	208	99	307
Transformer, dry-type, single phase 240/480 V primary 120/240 V secondary, 3 kVA	Instrumentation and Control	1.00 ea	12.477 ch/ea	59.61 /ch	12	744	495.00 /ea	495	-	-	-	-	-	-	1,239	632	1,870
Switchboards, main lugs only, 3 pole, 3 wire, to 600 volt, 200 amp		1.00 ea	14.556 ch/ea	119.21 /ch	29	1,735	1,525.00 /ea	1,525	-	-	-	-	-	-	3,260	1,681	4,941
Switchboards, main circuit breaker, 3 pole, 3 wire, to 600 volt, 200 amp		1.00 ea	14.556 ch/ea	119.21 /ch	29	1,735	3,250.00 /ea	3,250	-	-	-	-	-	-	4,985	2,646	7,631
Switchboards, main ground fault protector, 1200 - 2000 amp		1.00 ea	3.235 ch/ea	119.21 /ch	6	386	5,200.00 /ea	5,200	-	-	-	-	-	-	5,586	3,094	8,680
Switchboards, current/potential transformer metering compartment, 200 - 800 amp		1.00 ea	3.235 ch/ea	119.21 /ch	6	386	2,225.00 /ea	2,225	-	-	-	-	-	-	2,611	1,429	4,040
Switchboards, contactor control, 60 amp		1.00 ea	8.734 ch/ea	59.61 /ch	9	521	2,050.00 /ea	2,050	-	-	-	-	-	-	2,571	1,395	3,966
Switchboards, dog house 12", add		1.00 ea	7.278 ch/ea	119.21 /ch	15	868	360.00 /ea	360	-	-	-	-	-	-	1,228	615	1,843
Switchboards, distribution section, aluminum bus bars, subfeed lug-rated, 200 amp, excl breakers	STP Loading Control Panel PP-105KW-12	9.00 ea	14.556 ch/ea	119.21 /ch	262	15,617	1,725.00 /ea	15,525	-	-	-	-	-	-	31,142	16,132	47,275
Circuit breakers, plug-in, 1 P, 120/240 volt	STP Loading area lighting	1.00 ea	1.456 ch/ea	59.61 /ch	1	87	12.25 /ea	12	-	-	-	-	-	-	99	48	147
Motor control center, starters, class 1, type B, comb. MCP, FVNR, with control XFMR, size 1, 10 HP, 12" high, incl starters & structures	P-05, P-06	2.00 ea	6.469 ch/ea	59.61 /ch	13	771	1,775.00 /ea	3,550	-	-	-	-	-	-	4,321	2,354	6,676
Motor control center, for auxiliary contacts, add per starter	CNTAC-5	1.00 ea	1.092 ch/ea	59.61 /ch	1	65	259.00 /ea	259	-	-	-	-	-	-	324	176	500
Circuit breaker, 3 pole, 600 volt, 30 amp, enclosed (NEMA 1)	Breakers 2, 3, 4, 5, 7, 8, 9, 10, 11 - 15, 20, 30 amps	1.00 ea	5.459 ch/ea	59.61 /ch	5	325	610.00 /ea	610	-	-	-	-	-	-	935	496	1,432
Circuit breaker, 3 pole, 600 volt, 60 amp, enclosed (NEMA 1)	Breaker 1, 12 -50 & 45 amps	2.00 ea	6.238 ch/ea	59.61 /ch	12	744	610.00 /ea	1,220	-	-	-	-	-	-	1,964	1,037	3,001
Circuit breaker, 3 pole, 600 volt, 100 amp, enclosed (NEMA 1)	Breaker 8 -90 amp	1.00 ea	7.594 ch/ea	59.61 /ch	8	453	700.00 /ea	700	-	-	-	-	-	-	1,153	608	1,760
Safety switches, heavy duty, 3 pole, fusible, 600 volt, 30 amp, NEMA 1		7.00 ea	5.459 ch/ea	59.61 /ch	38	2,278	310.00 /ea	2,170	-	-	-	-	-	-	4,448	2,300	6,748
Safety switches, heavy duty, 3 pole, fusible, 600 volt, 60 amp, NEMA 1		1.00 ea	7.594 ch/ea	59.61 /ch	8	453	375.00 /ea	375	-	-	-	-	-	-	828	426	1,253
Safety switches, heavy duty, 3 pole, fusible, 600 volt, 100 amp, NEMA 1		1.00 ea	9.193 ch/ea	59.61 /ch	9	548	685.00 /ea	685	-	-	-	-	-	-	1,233	645	1,878
Control switches, push button, momentary contact, std oper, w/ colored button, 600 V 10 A	YL / HS	8.00 ea	0.514 ch/ea	59.61 /ch	4	245	16.50 /ea	132	-	-	-	-	-	-	377	191	568
Variable frequency drives, enclosed, 460 volt, 5 HP motor size, NEMA 1	VFD-5, VFD-6	2.00 ea	21.834 ch/ea	59.61 /ch	44	2,603	1,700.00 /ea	3,400	-	-	-	-	-	-	6,003	3,143	9,146
Variable frequency drives, enclosed, 460 volt, 25 HP motor size, NEMA 1	Breaker50 Amp VFD 15 HP	1.00 ea	26.071 ch/ea	119.21 /ch	52	3,108	4,025.00 /ea	4,025	-	-	-	-	-	-	7,133	3,734	10,867
Air terminal and base, copper, 3/8" dia x 10", to 75' h	Facility Lightning Protection	6.00 ea	2.183 ch/ea	59.61 /ch	13	781	23.00 /ea	138	-	-	-	-	-	-	919	449	1,368
Lightning protection cable, copper, 220 lb per thousand feet, to 75' h	Facility Lightning Protection	200.00 lf	0.055 ch/lf	59.61 /ch	11	651	2.73 /lf	546	-	-	-	-	-	-	1,197	616	1,813
Lightning protection cable, aluminum, 101 lb per thousand feet, to 75' h	Facility Lightning Protection	200.00 lf	0.062 ch/lf	59.61 /ch	12	744	0.82 /lf	164	-	-	-	-	-	-	908	446	1,354
Lightning Arrester, 175 V AC to ground	Facility Lightning Protection	6.00 ea	2.183 ch/ea	59.61 /ch	13	781	59.00 /ea	354	-	-	-	-	-	-	1,135	570	1,705
LS15011013 Electrical					1,280	75,718		82,299				1,409			139,426	71,745	211,171
LS15011113 Site work																	
Asphaltic concrete, parking lots & driveways, base course, 4" thick	West entrance	2,700.00 sf	0.002 ch/sf	265.81 /ch	26	1,163	1.36 /sf	3,672	-	-	271.13 /ch	1,186	-	-	6,021	3,273	9,293
Asphaltic concrete, parking lots & driveways, base course, 4" thick	East entrance	2,700.00 sf	0.002 ch/sf	265.81 /ch	26	1,163	1.36 /sf	3,672	-	-	271.13 /ch	1,186	-	-	6,021	3,273	9,293
Asphaltic concrete, parking lots & driveways, sand finish course, 1" thick	West entrance	2,700.00 sf	0.001 ch/sf	265.81 /ch	8	373	0.36 /sf	972	-	-	271.13 /ch	381	-	-	1,726	935	2,661
Asphaltic concrete, parking lots & driveways, sand finish course, 1" thick	East entrance	2,700.00 sf	0.001 ch/sf	265.81 /ch	8	373	0.36 /sf	972	-	-	271.13 /ch	381	-	-	1,726	935	2,661
Metal parking bumpers, pipe bollards, conc filled/painted, 8' L x 4' D hole, 12" diam.		12.00 ea	1.456 ch/ea	132.91 /ch	52	2,322	805.00 /ea	9,660	-	-	36.73 /ch	641	-	-	12,623	6,872	19,495
LS15011113 Site work					122	5,393		18,948				3,775			28,116	15,287	43,403
LS15011213 Doors																	
Door frames, steel channels with anchors and bar stops, 6" channel@ 8.2 lb/LF, 3' x 7' door, weighs 150 lb		4.00 ea	1.344 ch/ea	228.62 /ch	21	1,229	270.00 /ea	1,080	-	-	16.78 /ch	90	-	-	2,399	1,241	3,639
Doors, commercial, steel, flush, full panel, hollow core, hollow metal, 18 ga., 3'-0" x 7'-0" x 1-3/4" thick		4.00 ea	1.027 ch/ea	99.38 /ch	8	408	370.00 /ea	1,480	-	-	-	-	-	-	1,888	1,023	2,911
Doors, vertical lift, motorized, steel, 14 gauge, 10' x 20', incl. frame and control panel		2.00 ea	13.436 ch/ea	161.35 /ch	81	4,336	29,000.00 /ea	58,000	-	-	96.10 /ch	2,582	-	-	64,918	35,972	100,890
Door hardware, door closer, rack and pinion, adjustable backcheck, 3 way mount, all sizes, regular arm		4.00 ea	2.911 ch/ea	49.69 /ch	12	579	156.00 /ea	624	-	-	-	-	-	-	1,203	625	1,828
Door hardware, mortise lockset, commercial, wrought knobs and sectional trim, keyed, entrance, office/apartment, maximum		4.00 ea	2.183 ch/ea	49.69 /ch	9	434	295.00 /ea	1,180	-	-	-	-	-	-	1,614	867	2,481
Door hardware, doorstops, holder and bumper, floor or wall		4.00 ea	0.546 ch/ea	49.69 /ch	2	108	33.50 /ea	134	-	-	-	-	-	-	242	127	369
Door hardware, hinges, full mortise, high frequency, steel base, USP, 4-1/2" x 4-1/2"		6.00 pr		-		-	58.50 /pr	351	-	-	-	-	-	-	351	196	547
Door hardware, kick plate, stainless steel, 6" high for 3' door		4.00 ea	1.164 ch/ea	49.69 /ch	5	231	31.00 /ea	124	-	-	-	-	-	-	355	180	535
LS15011213 Doors					138	7,326		82,973				2,673			72,971	40,230	113,202
LS15011313 Transfer System																	
Grout, 0.15 C.F. per L.F., pumped	10" encasement pipe	55.00 lf	0.012 ch/lf	200.00 /ch	3	130	0.64 /lf	35	-	-	15.85 /ch	10	-	-	175	87	263
Pipe, steel, black, welded, 10" diameter, schedule 40, Spec. A-53, includes yoke & roll hanger assembly, sized for covering, 10' OC	10" encasement pipe	55.00 lf	0.728 ch/lf	215.91 /ch	120	8,643	67.00 /lf	3,685	-	-	6.96 /ch	279	-	-	12,606	6,338	18,944
Gasket and bolt set, for flanges, 150 lb., 1-1/2" pipe size	1 1/2" feed line	2.00 ea	1.164 ch/ea	71.97 /ch	2	168	2.58 /ea	5	-	-	-	-	-	-	173	83	256
Gasket and bolt set, for flanges, 150 lb., 1-1/2" pipe size	1 1/2" decant	2.00 ea	1.164 ch/ea	71.97 /ch	2	168	2.58 /ea	5	-	-	-	-	-	-	173	83	256
Gasket and bolt set, for flanges, 150 lb., 2" pipe size	2" Backwash	2.00 ea	1.344 ch/ea	71.97 /ch	3	193	4.69 /ea	9	-	-	-	-	-	-	203	97	300

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS15011313 Transfer System																	
Elbow, 90 Deg., steel, carbon steel, black, long radius, butt weld, standard weight, 10" pipe size, includes 1 weld per joint and weld machine	10" encasement pipe	1.10 ea	5.822 ch/ea	215.91 /ch	19	1,383	283.00 /ea	311	-	-	6.96 /ch	45	-	-	1,739	858	2,597
Elbow, 45 Deg., steel, carbon steel, black, long radius, butt weld, standard weight, 10" pipe size, includes 1 weld per joint and weld machine	10" encasement pipe	1.10 ea	5.822 ch/ea	215.91 /ch	19	1,383	200.00 /ea	220	-	-	6.96 /ch	45	-	-	1,647	807	2,455
Tee, steel, carbon steel, black, straight, butt weld, standard weight, 10" pipe size, includes 1 weld per joint and weld machine	10" encasement pipe	1.00 ea	8.734 ch/ea	215.91 /ch	26	1,886	450.00 /ea	450	-	-	6.96 /ch	61	-	-	2,397	1,185	3,581
Cap, steel, carbon steel, black, butt weld, standard weight, 10" pipe size, includes 1 weld per joint and weld machine	10" encasement pipe	1.00 ea	2.911 ch/ea	215.91 /ch	9	629	109.00 /ea	109	-	-	6.96 /ch	20	-	-	758	372	1,130
Pipe, stainless steel, welded, 1-1/2" pipe size, schedule 40, type 304, includes weld joint and clevis type hangers 10' OC	1 1/2" feed line	30.00 lf	0.224 ch/lf	143.94 /ch	13	967	14.85 /lf	446	-	-	6.96 /ch	47	-	-	1,459	736	2,196
Pipe, stainless steel, welded, 1-1/2" pipe size, schedule 40, type 304, includes weld joint and clevis type hangers 10' OC	1 1/2" decant	10.00 lf	0.224 ch/lf	143.94 /ch	4	322	14.85 /lf	149	-	-	6.96 /ch	16	-	-	486	245	732
Pipe, stainless steel, welded, 2" pipe size, schedule 40, type 304, includes weld joint and clevis type hangers 10' OC	2" Backwash	15.00 lf	0.282 ch/lf	143.94 /ch	8	608	18.45 /lf	277	-	-	6.96 /ch	29	-	-	914	461	1,376
Elbow, 90 Deg., stainless steel, socket weld, 3000 lb., 1-1/2", type 304, includes the weld machine	1 1/2" feed line	4.00 ea	2.043 ch/ea	143.94 /ch	16	1,176	218.00 /ea	872	-	-	6.96 /ch	57	-	-	2,105	1,081	3,186
Elbow, 90 Deg., stainless steel, socket weld, 3000 lb., 1-1/2", type 304, includes the weld machine	1 1/2" decant	3.00 ea	2.043 ch/ea	143.94 /ch	12	882	218.00 /ea	654	-	-	6.96 /ch	43	-	-	1,579	810	2,389
Elbow, 90 Deg., stainless steel, socket weld, 3000 lb., 2", type 304, includes the weld machine	2" Backwash	3.00 ea	2.406 ch/ea	143.94 /ch	14	1,039	350.00 /ea	1,050	-	-	6.96 /ch	50	-	-	2,139	1,111	3,250
Flange, stainless steel, welded, slip-on, 150 lb., 1-1/2" diam., type 304, includes front and back weld	1 1/2" feed line	2.00 ea	1.965 ch/ea	143.94 /ch	8	566	48.00 /ea	96	-	-	6.96 /ch	27	-	-	689	339	1,028
Flange, stainless steel, welded, slip-on, 150 lb., 1-1/2" diam., type 304, includes front and back weld	1 1/2" decant	2.00 ea	1.965 ch/ea	143.94 /ch	8	566	48.00 /ea	96	-	-	6.96 /ch	27	-	-	689	339	1,028
Flange, stainless steel, welded, slip-on, 150 lb., 2" diam., type 304, includes front and back weld	2" Backwash	2.00 ea	2.314 ch/ea	143.94 /ch	9	666	61.00 /ea	122	-	-	6.96 /ch	32	-	-	820	404	1,224
1 1/2" ID Hose in 4" ID Hose Transfer Line	Bldg to new bldg slurry feed lineCosts and labor productivity from DBVS Project	65.00 lf	0.328 mh/lf	71.97 /mh	21	1,532	664.62 /lf	43,200	-	-	-	-	-	-	44,732	24,907	69,640
1 1/2" ID Hose in 4" ID Hose Transfer Line	Bldg to new bldg decant line Costs and labor productivity from DBVS ProjectCosts and labor productivity from DBVS Project	60.00 lf	0.328 mh/lf	71.97 /mh	20	1,414	711.67 /lf	42,700	-	-	-	-	-	-	44,114	24,571	68,686
1 1/2" ID Hose in 4" ID Hose Transfer Line	STC to pipe connection fill Costs and labor productivity from DBVS Project	15.00 lf	0.328 mh/lf	71.97 /mh	5	354	2,313.33 /lf	34,700	-	-	-	-	-	-	35,054	19,588	54,642
1 1/2" ID Hose in 4" ID Hose Transfer Line	STC to decant pump connection Costs and labor productivity from DBVS Project	20.00 lf	0.328 mh/lf	71.97 /mh	7	471	1,560.00 /lf	31,200	-	-	-	-	-	-	31,671	17,686	49,357
1 1/2" ID Hose in 4" ID Hose Transfer Line	Decant pump connection to pipe connection decant Costs and labor productivity from DBVS Project	10.00 lf	0.328 mh/lf	71.97 /mh	3	236	3,450.00 /lf	34,500	-	-	-	-	-	-	34,736	19,420	54,156
2" ID Hose in 4" ID Hose Transfer Line	Backflush STC to pipe connection Costs and labor productivity from DBVS Project	20.00 lf	0.328 mh/lf	71.97 /mh	7	471	1,750.00 /lf	35,000	-	-	-	-	-	-	35,471	19,812	55,284
LS15011313 Transfer System					360	25,852		229,891				788			256,531	141,421	397,953
LS15011413 Transfer Berm & Containment																	
Concrete testing, cement, physical tests, ASTM C 150	Feed & decant concrete encasement	0.49 ea	-	-	-	-	-	-	-	-	-	-	318.00 /ea	154	154	74	228
Concrete testing, compressive strength test, ASTM C 39, incl. delivery to lab per cylinder	Feed & decant concrete encasement	0.16 ea	-	-	-	-	-	-	-	-	-	-	12.00 /ea	2	2	1	3
Soil testing, soil density, nuclear method, ASTM D2922	Feed & decant transfer line berm	0.47 ea	-	-	-	-	-	-	-	-	-	-	35.00 /ea	16	16	8	24
Soil testing, Proctor compaction, 6" modified mold	Feed & decant transfer line berm	1.00 ea	-	-	-	-	-	-	-	-	-	-	68.00 /ea	68	68	32	100
Earthwork inspection technician, per day	Feed & decant transfer line berm	0.06 ea	-	-	-	-	-	-	-	-	-	-	210.00 /ea	12	12	6	18
C.I.P. concrete forms, slab on grade, edge, wood, 7" to 12" high, 4 use, includes erecting, bracing, stripping and cleaning	Feed & decant concrete encasement	151.84 sfca	0.040 ch/sfca	192.00 /ch	24	1,171	0.74 /sfca	112	-	-	-	-	-	-	1,283	621	1,904
C.I.P. concrete forms, slab on grade, edge, wood, 7" to 12" high, 4 use, includes erecting, bracing, stripping and cleaning	Cover Panels	128.80 sfca	0.040 ch/sfca	192.00 /ch	21	993	0.74 /sfca	95	-	-	-	-	-	-	1,088	527	1,615
C.I.P. concrete forms, slab on grade, slab blockouts, wood, to 12" high, 1 use, includes erecting, bracing, stripping and cleaning	Feed & decant concrete encasement	140.00 lf	0.087 ch/lf	192.00 /ch	49	2,348	0.63 /lf	88	-	-	-	-	-	-	2,436	1,168	3,604
C.I.P. concrete forms, wall, corbel/haunch, add to wall form, to 12" wide, 1 use, includes erecting, bracing, stripping and cleaning	Cover Panels	70.00 lf	0.116 ch/lf	291.38 /ch	49	2,375	1.95 /lf	137	-	-	-	-	-	-	2,511	1,208	3,720
Slab bolsters, for reinforcing steel, continuous (SB), plain steel, 1" high, includes material only	Feed & decant concrete encasement	0.70 clf	-	-	-	-	86.50 /clf	61	-	-	-	-	-	-	61	34	94
Screw anchor eye bolts, plain steel, for CIP concrete, 1" x 9" long, includes material only	Cover Panels	0.44 c	-	-	-	-	12,100.00 /c	5,324	-	-	-	-	-	-	5,324	2,980	8,304
Reinforcing steel, in place, slab on grade, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	Feed & decant concrete encasement	0.31 ton	7.594 ch/ton	183.26 /ch	9	426	1,475.00 /ton	451	-	-	-	-	-	-	877	456	1,333
Reinforcing steel, in place, slab on grade, #3 to #7, A615, grade 60, incl labor for accessories, excl material for accessories	Cover Panels	0.02 ton	7.594 ch/ton	183.26 /ch	1	32	1,475.00 /ton	34	-	-	-	-	-	-	66	34	100
Struct concrete,ready mix,normal wt,4000 psi,includes local aggregate,sand,portland cement and water,delivered,excludes all additives and treatments	Feed & decant concrete encasement	8.09 cy	-	-	-	-	106.00 /cy	857	-	-	-	-	-	-	857	480	1,337
Structural concrete, placing, slab on grade, pumped, over 6" thick, includes vibrating, excludes material	Feed & decant concrete encasement	8.09 cy	0.094 ch/cy	352.16 /ch	6	269	-	-	-	-	98.73 /ch	75	-	-	344	170	515
Concrete finishing, floors, manual screed, bull float	Feed & decant concrete encasement	210.00 sf	0.004 ch/sf	137.99 /ch	3	127	-	-	-	-	-	-	-	-	127	60	187
Concrete finishing, floors, manual screed, bull float, machine float & steel trowel (walk-behind)	Feed & decant concrete encasement	210.00 sf	0.010 ch/sf	137.99 /ch	6	295	-	-	-	-	5.30 /ch	11	-	-	306	147	453
Concrete surface treatment, curing, sprayed membrane compound	Feed & decant concrete encasement	2.10 csf	0.184 ch/csf	85.86 /ch	1	33	5.25 /csf	11	-	-	-	-	-	-	44	22	66
Grout, 0.15 C.F. per L.F., pumped	encase feed & decant lines	70.00 lf	0.012 ch/lf	200.00 /ch	3	165	0.64 /lf	45	-	-	15.85 /ch	13	-	-	223	111	334
Fine grading, fine grade for slab on grade, machine	Feed & decant concrete encasement	23.33 sy	0.017 ch/sy	89.98 /ch	1	35	-	-	-	-	68.78 /ch	27	-	-	62	32	94
Fine grading, fine grade for slab on grade, hand grading	Feed & decant concrete encasement	2.33 sy	0.025 ch/sy	128.79 /ch	0	8	-	-	-	-	4.90 /ch	0	-	-	8	4	12
Excavating, bulk bank measure, 5 C.Y. capacity = 185 C.Y./hour, wheel mounted, excluding truck loading	Feed & decant transfer line berm	46.67 bcy	0.012 ch/bcy	68.51 /ch	1	38	-	-	-	-	106.80 /ch	59	-	-	97	51	148
Backfill, structural, sand and gravel, 80 H.P. dozer, 50' haul, excludes compaction	Feed & decant transfer line berm	53.67 lcy	0.016 ch/lcy	68.51 /ch	1	58	-	-	-	-	49.90 /ch	43	-	-	101	52	152
Hauling, excavated or borrow material, loose cubic yards, 1/4 mile round trip, 3.7 loads/hour, 12 C.Y. dump truck, highway haulers, excludes loading	Feed & decant transfer line berm	53.67 lcy	0.061 ch/lcy	48.02 /ch	3	156	-	-	-	-	66.63 /ch	217	-	-	373	196	569
Compaction, structural, common fill, 8" lifts, sheepsfoot or wobbly wheel roller	Feed & decant transfer line berm	53.67 ecy	0.013 ch/ecy	68.51 /ch	1	49	-	-	-	-	142.75 /ch	103	-	-	152	81	233
LS15011413 Transfer Berm & Containment					180	8,577		7,215				548		253	16,594	8,554	25,147
LS15011513 Bridge Crane, Hoist, Trolly																	
Crane Rail, running track only, 40 lb per ft, excl. equipment		4,080.00 lb	0.003 ch/lb	228.62 /ch	51	2,910	0.62 /lb	2,530	-	-	16.78 /ch	214	-	-	5,653	2,922	8,576

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS15011513 Bridge Crane, Hoist, Trolly																	
Overhead Bridge Cranes, under hung hoist, electric operating, 1 girder, 7.5 ton, 30' span		1.00 ea	17.467 ch/ea	215.47 /ch	74	3,764	/ea	-	-	-	21.89 /ch	382	-	-	4,146	2,008	6,154
LS15011513 Bridge Crane, Hoist, Trolly					125	6,674		2,530				596			9,799	4,930	14,730
LS15011613 Mechanical																	
Pump,general utility,centrifugal,in-line,vertical mount,iron body,125lb flanged,3550 rpm,single stage,75 gpm,5 hp, 1-1/2"discharge,includes tefc motor	P-05 Decant	1.00 ea	10.917 ch/ea	143.94 /ch	22	1,571	1,075.00 /ea	1,075	-	-	-	-	-	-	2,646	1,351	3,997
Pump,general utility,cntrfgl,in-line,vertical mount,iron body,125lb flanged,3550 rpm,single stage,125 gpm,10 hp, 1-1/2"discharge,includes tefc motor	P-06 Fluidizer	1.00 ea	10.275 ch/ea	143.94 /ch	21	1,479	1,525.00 /ea	1,525	-	-	-	-	-	-	3,004	1,558	4,562
Valves, stainless steel, ball, threaded, 1-1/2"	CV-4	7.00 ea	1.344 ch/ea	71.97 /ch	9	677	163.00 /ea	1,141	-	-	-	-	-	-	1,818	961	2,779
Valves, stainless steel, check, threaded, 200 lb., 1-1/2"	V-6, 7, 8, 9, 10, 11, 12, 13,	1.00 ea	1.344 ch/ea	71.97 /ch	1	97	340.00 /ea	340	-	-	-	-	-	-	437	236	673
Control Components, Flow Transmitter	FE/FIT - Mass Flow/Flow-Magnetic	3.00 ea	4.367 ch/ea	71.97 /ch	13	943	4,500.00 /ea	13,500	-	-	-	-	-	-	14,443	8,005	22,448
Control Components, Differential Pressure	DPIT - Transmitter	1.00 ea	2.911 ch/ea	71.97 /ch	3	210	3,100.00 /ea	3,100	-	-	-	-	-	-	3,310	1,835	5,144
Control Components, Pressure	PIT - Transmitter	6.00 ea	1.456 ch/ea	71.97 /ch	9	629	2,900.00 /ea	17,400	-	-	-	-	-	-	18,029	10,037	28,066
Control Components, Indication Display	PI - Panel Meter	6.00 ea	2.183 ch/ea	71.97 /ch	13	943	80.00 /ea	480	-	-	-	-	-	-	1,423	718	2,141
Control Components, Indication Display	FI - Panel Meter	5.00 ea	2.183 ch/ea	71.97 /ch	11	786	80.00 /ea	400	-	-	-	-	-	-	1,186	598	1,784
Control Components, Turbidity / % Solids	AE/AIT - Transmitter	1.00 ea	2.183 ch/ea	71.97 /ch	2	157	213.00 /ea	213	-	-	-	-	-	-	370	194	564
Control Components, transmitter	WE/WIT - Load cell / scale	1.00 ea	2.183 ch/ea	71.97 /ch	2	157	6,000.00 /ea	6,000	-	-	-	-	-	-	6,157	3,433	9,590
Control Components, transmitter	LIT-01, LIT-02	30.00 ea	17.467 ch/ea	71.97 /ch	524	37,714	3,470.00 /ea	104,100	-	-	-	-	-	-	141,814	76,236	218,050
Control Components, transmitter	LI-01	1.00 ea	2.183 ch/ea	71.97 /ch	2	157	80.00 /ea	80	-	-	-	-	-	-	237	120	357
Control Components, transmitter	LE-01	1.00 ea	2.183 ch/ea	71.97 /ch	2	157	80.00 /ea	80	-	-	-	-	-	-	237	120	357
Leak Detection Systems, liquid phase detection	LDSTA-3	1.00 ea	8.734 ch/ea	59.61 /ch	9	521	760.00 /ea	760	-	-	-	-	-	-	1,281	673	1,954
Pulsation Damper (3 gallon tank with rubber bladder)		2.00 ea	13.133 ch/ea	143.94 /ch	53	3,781	1,000.00 /ea	2,000	-	-	96.10 /ch	2,524	-	-	8,305	4,334	12,639
Diaphragm Seal		2.00 ea	4.367 ch/ea	143.94 /ch	17	1,257	1,000.00 /ea	2,000	-	-	96.10 /ch	839	-	-	4,096	2,188	6,285
LS15011613 Mechanical					713	51,235		154,194				3,364			208,792	112,598	321,390
FY13 Fiscal Year 2013					**28,617**	**1,868,342**		**2,281,531**		**8,093**		**52,481**		**3,380**	**4,213,826**	**2,202,234**	**6,416,061**
.15.01 New Construction					**28,617**	**1,868,342**		**2,281,531**		**8,093**		**52,481**		**3,380**	**4,213,826**	**2,202,234**	**6,416,061**
.15.03 Bldg. Modifications																	
FY13 Fiscal Year 2013																	
LS15030313 Demolition & Bldg Seperation																	
Containment area, 2" x 4" @ 16", 3/4" plywood each side		600.00 sf	0.062 ch/sf	99.38 /ch	75	3,720	2.50 /sf	1,500	-	-	-	-	-	-	5,220	2,012	7,232
Preparation of containment area, cover surfaces with polyethylene sheeting, walls, each layer, 6 mil, incl. glue & tape		600.00 sf	0.003 ch/sf	447.03 /ch	14	778	0.06 /sf	36	-	-	-	-	-	-	814	297	1,111
Seal existing Door, caulk seams with latex		20.00 lf	0.076 ch/lf	49.69 /ch	2	75	0.15 /lf	3	-	-	-	-	-	-	78	29	107
Concrete sawing, concrete slabs, mesh reinforcing, up to 3" deep	End5 wall at column line plus 6'	20.00 lf	0.018 ch/lf	95.06 /ch	1	34	0.49 /lf	10	-	-	50.26 /ch	18	-	-	62	25	86
Concrete sawing, concrete, existing slab, mesh reinforcing, for each additional inch of depth over 3"	End5 wall at column line plus 6'	60.00 lf	0.011 ch/lf	95.06 /ch	1	62	0.16 /lf	10	-	-	50.26 /ch	33	-	-	105	41	146
Concrete sawing, concrete walls, rod reinforcing, per inch of depth	End5 wall at column line plus 6'	72.00 lf	0.116 ch/lf	95.06 /ch	17	797	0.62 /lf	45	-	-	85.53 /ch	717	-	-	1,559	627	2,186
Cutting, steel, to 1/2" thick, by hand, incl prep, torch cutting & grinding, excl staging	X Bracing between Col line 4 & 5 Both sides	10.00 lf	0.055 ch/lf	57.15 /ch	1	31	-	-	-	-	11.58 /ch	6	-	-	38	14	52
Welding structural steel in field, 3 passes, 0.5 Lb/LF, 3/8" thick, continuous fillet, type 6011	X Bracing between Col line 4 & 5 Both sides	10.00 lf	0.582 ch/lf	57.15 /ch	6	333	1.18 /lf	12	-	-	16.78 /ch	98	-	-	442	169	611
Angle framing, structural steel, 3"x3"x3/8", field fabricated, incl cutting & welding	X Bracing between Col line 4 & 5 Both sides	200.00 lf	0.306 ch/lf	171.46 /ch	184	10,509	6.50 /lf	1,300	-	-	16.78 /ch	1,028	-	-	12,837	4,836	17,672
Blanket insulation, for walls or ceilings, kraft faced fiberglass, 6" thick, R19, 23" wide	End5 wall at column line	400.00 sf	0.011 ch/sf	49.69 /ch	4	217	0.44 /sf	176	-	-	-	-	-	-	393	157	550
Steel Siding, galvanized, corrugated or ribbed, on steel frame, 22 gauge, incl. fasteners	End5 wall at column line	400.00 sf	0.023 ch/sf	204.36 /ch	36	1,855	2.06 /sf	824	-	-	-	-	-	-	2,679	1,037	3,716
Door demolition, special doors, overhead, commercial, 20' x 16' high, remove, includes frames	End5 wall at column line	1.00 ea	5.822 ch/ea	99.38 /ch	12	579	-	-	-	-	-	-	-	-	579	209	788
Door frames, steel channels with anchors and bar stops, 6" channel@ 8.2 lb/LF, 3' x 7' door, weighs 150 lb	End5 wall at column line	1.00 ea	1.344 ch/ea	228.62 /ch	5	307	270.00 /ea	270	-	-	16.78 /ch	23	-	-	600	241	841
Doors, commercial, steel, flush, full panel, hollow core, hollow metal, 18 ga., 3'-0" x 7'-0" x 1-3/4" thick	End5 wall at column line	1.00 ea	1.027 ch/ea	99.38 /ch	2	102	370.00 /ea	370	-	-	-	-	-	-	472	201	674
Door hardware, door closer, rack and pinion, adjustable backcheck, 3 way mount, all sizes, regular arm	End5 wall at column line	1.00 ea	2.911 ch/ea	49.69 /ch	3	145	156.00 /ea	156	-	-	-	-	-	-	301	122	422
Door hardware, mortise lockset, commercial, wrought knobs and sectional trim, keyed, entrance, office/apartment, maximum	End5 wall at column line	1.00 ea	2.183 ch/ea	49.69 /ch	2	108	295.00 /ea	295	-	-	-	-	-	-	403	170	574
Door hardware, doorstops, holder and bumper, floor or wall	End5 wall at column line	1.00 ea	0.546 ch/ea	49.69 /ch	1	27	33.50 /ea	34	-	-	-	-	-	-	61	25	85
Door hardware, hinges, full mortise, high frequency, steel base, USP, 4-1/2" x 4-1/2",	End5 wall at column line	1.50 pr		-		-	58.50 /pr	88	-	-	-	-	-	-	88	39	127
Door hardware, kick plate, stainless steel, 6" high for 3' door	End5 wall at column line	1.00 ea	1.164 ch/ea	49.69 /ch	1	58	31.00 /ea	31	-	-	-	-	-	-	89	35	124
Pre-Eng Steel Bldg Access., flashings, corner or eave, galvanized, 26 gauge	End5 wall at column line	60.00 lf	0.073 ch/lf	114.31 /ch	9	499	4.12 /lf	247	-	-	-	-	-	-	746	290	1,037
LS15030313 Demolition & Bldg Seperation					375	20,236		5,405				1,923			27,563	10,576	38,140
LS15030413 Mechanical																	
Grout, 0.15 C.F. per L.F., pumped	10" encasement pipe	10.00 lf	0.028 ch/lf	98.98 /ch	1	28	0.64 /lf	6	-	-	15.85 /ch	4	-	-	39	15	54
Pipe, steel, black, welded, 10" diameter, schedule 40, Spec. A-53, includes yoke & roll hanger assembly, sized for covering, 10' OC	10" encasement pipe	10.00 lf	1.736 ch/lf	110.72 /ch	35	1,922	67.00 /lf	670	-	-	16.78 /ch	291	-	-	2,883	1,123	4,006
Gasket and bolt set, for flanges, 150 lb., 1-1/2" pipe size		7.00 ea	2.778 ch/ea	55.36 /ch	19	1,076	2.58 /ea	18	-	-	-	-	-	-	1,095	397	1,492
Pipe, stainless steel, welded, 1-1/2" pipe size, schedule 40, type 304, includes weld joint and clevis type hangers 10' OC		50.00 lf	0.534 ch/lf	110.72 /ch	53	2,957	14.85 /lf	743	-	-	16.78 /ch	448	-	-	4,148	1,599	5,747
Elbow, 90 Deg., stainless steel, socket weld, 3000 lb., 1-1/2", type 304, includes the weld machine		4.00 ea	4.873 ch/ea	110.72 /ch	39	2,158	218.00 /ea	872	-	-	16.78 /ch	327	-	-	3,357	1,314	4,671
Elbow, 45 Deg., stainless steel, socket weld, 3000 lb., 1-1/2", type 304, includes the weld machine		2.00 ea	4.873 ch/ea	110.72 /ch	19	1,079	213.00 /ea	426	-	-	16.78 /ch	164	-	-	1,669	652	2,321
Tee, stainless steel, socket weld, 3000 lb., 1-1/2", type 304, includes the weld machine		7.00 ea	7.323 ch/ea	110.72 /ch	103	5,675	320.00 /ea	2,240	-	-	16.78 /ch	860	-	-	8,775	3,431	12,206
Flange, stainless steel, welded, slip-on, 150 lb., 1-1/2" diam., type 304, includes front and back weld		7.00 ea	4.687 ch/ea	110.72 /ch	66	3,633	48.00 /ea	336	-	-	16.78 /ch	550	-	-	4,519	1,708	6,227
Pressure regulator, safety valve	PSV-01, PSV-03	2.00 ea	3.472 ch/ea	110.72 /ch	14	769	200.00 /ea	400	-	-	-	-	-	-	1,169	456	1,625
Pump,general utility,cntrfgl,in-line,vertical mount,iron body,125lb flanged,3550 rpm,single stage,125 gpm,10 hp, 1-1/2"discharge,includes tefc motor	P-01 Feed Pump 7.5 HP	1.00 ea	24.510 ch/ea	110.72 /ch	49	2,714	1,525.00 /ea	1,525	-	-	-	-	-	-	4,239	1,659	5,898
Pump,general utility,cntrfgt,in-line,vertical mount,iron body,125lb flanged,3550 rpm,single stage,200 gpm,30 hp, 1-1/2"discharge,includes tefc motor	P-03 High Pressure Pump 20 HP	1.00 ea	27.778 ch/ea	110.72 /ch	56	3,076	3,250.00 /ea	3,250	-	-	-	-	-	-	6,326	2,557	8,883
Valves, stainless steel, ball, threaded, 3/4"	V-2	1.00 ea	2.083 ch/ea	55.36 /ch	2	115	67.50 /ea	68	-	-	-	-	-	-	183	72	255
Valves, stainless steel, ball, threaded, 1"	V-1, V-3, V-4, V-5	4.00 ea	2.193 ch/ea	55.36 /ch	9	486	82.00 /ea	328	-	-	-	-	-	-	814	321	1,135

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS15030413 Mechanical																	
Valves, stainless steel, check, threaded, 200 lb., 3/4"	CV-2	1.00 ea	2.083 ch/ea	55.36 /ch	2	115	138.00 /ea	138	-	-	-	-	-	-	253	103	356
Valves, stainless steel, check, threaded, 200 lb., 1"	CV-1, CV-3	2.00 ea	2.193 ch/ea	55.36 /ch	4	243	176.00 /ea	352	-	-	-	-	-	-	595	244	839
Control Components, Flow Transmitter	FE/FIT - Mass Flow/Flow-Magnetic	1.00 ea	10.417 ch/ea	55.36 /ch	10	577	4,500.00 /ea	4,500	-	-	-	-	-	-	5,077	2,209	7,286
Control Components, Pressure	PIT - Transmitter	2.00 ea	3.472 ch/ea	55.36 /ch	7	384	2,900.00 /ea	5,800	-	-	-	-	-	-	6,184	2,718	8,902
Control Components, Indication Display	AI- Panel Meter	1.00 ea	5.208 ch/ea	55.36 /ch	5	288	80.00 /ea	80	-	-	-	-	-	-	368	140	508
Control Components, Indication Display	FI - Panel Meter	1.00 ea	5.208 ch/ea	55.36 /ch	5	288	80.00 /ea	80	-	-	-	-	-	-	368	140	508
Control Components, Indication Display	PI - Panel Meter	2.00 ea	5.208 ch/ea	55.36 /ch	10	577	80.00 /ea	160	-	-	-	-	-	-	737	280	1,016
Control Components, Turbidity / % Solids	AE/AIT - Transmitter	1.00 ea	5.208 ch/ea	55.36 /ch	5	288	213.00 /ea	213	-	-	-	-	-	-	501	199	700
Control switches, push button, momentary contact, std oper, w/ colored button, 600 V 10 A	YL / HS	4.00 ea	1.225 ch/ea	60.19 /ch	5	295	16.50 /ea	66	-	-	-	-	-	-	361	136	497
Leak Detection Systems, liquid phase detection		2.00 ea	20.833 ch/ea	61.07 /ch	42	2,545	760.00 /ea	1,520	-	-	-	-	-	-	4,065	1,596	5,661
1 1/2" ID High-Performance Polyethylene Chemical Hose	H - 1 _McMaster Carr	150.00 lf	0.781 mh/lf	55.36 /mh	117	6,488	14.58 /lf	2,187	-	-	-	-	-	-	8,675	3,319	11,993
1 1/2" ID High-Performance Polyethylene Chemical Hose	H - 3 _McMaster Carr	5.00 lf	0.781 mh/lf	55.36 /mh	4	216	14.58 /lf	73	-	-	-	-	-	-	289	111	400
1 1/2" ID High-Performance Polyethylene Chemical Hose	H - 8 _McMaster Carr	5.00 lf	0.781 mh/lf	55.36 /mh	4	216	14.58 /lf	73	-	-	-	-	-	-	289	111	400
1 1/2" ID High-Performance Polyethylene Chemical Hose	H - 2 _McMaster Carr	150.00 lf	0.781 mh/lf	55.36 /mh	117	6,488	14.58 /lf	2,187	-	-	-	-	-	-	8,675	3,319	11,993
1 1/2" ID Hose Fittings	H - 3 _McMaster Carr	1.00 set	2.604 ch/set	55.36 /ch	3	144	174.38 /lf	-	-	-	-	-	-	-	144	52	196
1 1/2" ID Hose Fittings	H - 8 _McMaster Carr	1.00 set	2.604 ch/set	55.36 /ch	3	144	174.38 /set	174	-	-	-	-	-	-	319	130	448
1 1/2" ID Hose Fittings	H - 1 _McMaster Carr	1.00 set	2.604 ch/set	55.36 /ch	3	144	174.38 /set	174	-	-	-	-	-	-	319	130	448
1 1/2" ID Hose Fittings	H - 2 _McMaster Carr	1.00 set	2.604 ch/set	55.36 /ch	3	144	174.38 /set	174	-	-	-	-	-	-	319	130	448
3/4 " ID Hose, Heavy Duty High-Pressure	McMaster Carr	150.00 lf	0.781 mh/lf	55.36 /mh	117	6,488	3.84 /lf	576	-	-	-	-	-	-	7,064	2,602	9,666
3/4 " ID Hose Fittings Heavy Duty High-Pressure	McMaster Carr	3.00 set	2.604 ch/set	55.36 /ch	8	433	55.04 /set	165	-	-	-	-	-	-	598	230	827
1 " ID Hose, Heavy Duty High-Pressure	McMaster Carr	300.00 lf	0.781 mh/lf	55.36 /mh	234	12,975	4.75 /lf	1,425	-	-	-	-	-	-	14,400	5,326	19,726
1 " ID Hose Fittings Heavy Duty High-Pressure	McMaster Carr	6.00 set	2.604 ch/set	55.36 /ch	16	865	73.74 /set	442	-	-	-	-	-	-	1,307	510	1,817
Heavy Duty Spray Nozzels		2.00 ea	0.144 mh/ea	55.36 /mh	0	16	121.33 /ea	243	-	-	-	-	-	-	259	114	372
XAGO Tool Install	Nuvision Engineering -	1.00 ea	41.667 ch/ea	57.10 /ch	42	2,379	-	-	/ea	-	-	-	-	-	2,379	860	3,240
Centrifugal, pumps, 15 HP,	P-04 Under water pump & motor 15 hp	1.00 ea	31.328 ch/ea	55.36 /ch	31	1,734	/ea	-	-	-	/ch	-	-	-	1,734	627	2,362
Rupture Disk		1.00 ea	10.417 ch/ea	55.36 /ch	10	577	250.00 /ea	250	-	-	/ch	-	-	-	827	320	1,146
Pulsation Damper (3 gallon tank with rubber bladder)		2.00 ea	31.328 ch/ea	55.36 /ch	63	3,469	1,000.00 /ea	2,000	-	-	/ch	-	-	-	5,469	2,144	7,612
Diaphragm Seal		7.00 ea	10.417 ch/ea	55.36 /ch	73	4,037	500.00 /ea	3,500	-	-	/ch	-	-	-	7,537	3,016	10,553
LS15030413 Mechanical					1,407	78,244		37,435				2,644			118,324	46,118	164,442
LS15030513 Electrical																	
Wire connector, screw type, insulated, #16 to #10	Heat trace Power	6.00 ea	0.181 ch/ea	60.19 /ch	1	65	0.14 /ea	1	-	-	-	-	-	-	66	24	90
Wire connector, screw type, insulated, #16 to #10	Heat Trace Decant & IXM flush power	6.00 ea	0.181 ch/ea	60.19 /ch	1	65	0.14 /ea	1	-	-	-	-	-	-	66	24	90
Terminal lugs, solderless, #8 to #4	Pumps 11 FLA & 27 FLA	6.00 ea	1.389 ch/ea	60.19 /ch	8	502	0.87 /ea	5	-	-	-	-	-	-	507	184	691
Wire, copper, solid, 600 volt, #10, type THWN-THHN, in raceway	Heat trace Power	6.15 clf	4.167 ch/clf	60.19 /ch	26	1,542	25.00 /clf	154	-	-	-	-	-	-	1,696	626	2,322
Wire, copper, solid, 600 volt, #10, type THWN-THHN, in raceway	Heat Trace Decant & IXM flush power	6.15 clf	4.167 ch/clf	60.19 /ch	26	1,542	25.00 /clf	154	-	-	-	-	-	-	1,696	626	2,322
Wire, copper, stranded, 600 volt, #4, type THWN-THHN, in raceway	Pumps 11 FLA & 27 FLA	6.15 clf	3.931 ch/clf	120.38 /ch	48	2,910	106.00 /clf	652	-	-	-	-	-	-	3,562	1,342	4,904
Rigid galvanized steel conduit, 3/4" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	Heat trace Power	200.00 lf	0.521 ch/lf	60.19 /ch	104	6,270	3.23 /lf	646	-	-	-	-	-	-	6,916	2,555	9,470
Rigid galvanized steel conduit, 3/4" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	Heat Trace Decant & IXM flush power	200.00 lf	0.521 ch/lf	60.19 /ch	104	6,270	3.23 /lf	646	-	-	-	-	-	-	6,916	2,555	9,470
Rigid galvanized steel conduit, 1-1/2" diameter, to 15' H, incl 2 terminations, 2 elbows & 11 beam clamps per 100 LF	Pumps 11 FLA & 27 FLA	200.00 lf	0.758 ch/lf	60.19 /ch	152	9,119	7.15 /lf	1,430	-	-	-	-	-	-	10,549	3,934	14,483
Pull boxes, sheet metal, type SC, raintight & weatherproof, 6" L x 6" W x 6" D, NEMA 3R	Heat trace Power	4.00 ea	4.167 ch/ea	60.19 /ch	17	1,003	21.50 /ea	86	-	-	-	-	-	-	1,089	401	1,490
Pull boxes, sheet metal, type SC, raintight & weatherproof, 6" L x 6" W x 6" D, NEMA 3R	Heat Trace Decant & IXM flush power	4.00 ea	4.167 ch/ea	60.19 /ch	17	1,003	21.50 /ea	86	-	-	-	-	-	-	1,089	401	1,490
Pull boxes, sheet metal, type SC, raintight & weatherproof, 12" L x 12" W x 6" D, NEMA 3R	Pumps 11 FLA & 27 FLA	4.00 ea	8.333 ch/ea	60.19 /ch	33	2,006	51.00 /ea	204	-	-	-	-	-	-	2,210	816	3,027
Knockouts, metal boxes & enclosures, with hole saw, 3/4" pipe size, to 8' high	Heat trace Power	8.00 ea	0.887 ch/ea	60.19 /ch	7	427	-	-	-	-	-	-	-	-	427	154	581
Knockouts, metal boxes & enclosures, with hole saw, 3/4" pipe size, to 8' high	Heat Trace Decant & IXM flush power	8.00 ea	0.887 ch/ea	60.19 /ch	7	427	-	-	-	-	-	-	-	-	427	154	581
Knockouts, metal boxes & enclosures, with hole saw, 1-1/2" pipe size, to 8' high	Pumps 11 FLA & 27 FLA	8.00 ea	1.302 ch/ea	60.19 /ch	10	627	-	-	-	-	-	-	-	-	627	227	854
Transformer, dry-type, single phase 240/480 V primary 120/240 V secondary, 10 kVA	Heat trace power	2.00 ea	26.042 ch/ea	120.38 /ch	104	6,270	1,200.00 /ea	2,400	-	-	-	-	-	-	8,670	3,335	12,004
Motor control center, starters, class 1, type B, comb. MCP, FVNR, with control XFMR, size 1, 10 HP, 12" high, incl starters & structures	P-01	1.00 ea	15.432 ch/ea	60.19 /ch	15	929	1,775.00 /ea	1,775	-	-	-	-	-	-	2,704	1,125	3,829
Motor control center, starters, class 1, type B, comb. MCP, FVNR, with control XFMR, size 2, 25 HP, 18" high, incl starters & structures	P-03, P-04	2.00 ea	10.417 ch/ea	120.38 /ch	42	2,508	2,025.00 /ea	4,050	-	-	-	-	-	-	6,558	2,708	9,266
Motor control center, for pilot lights, add per starter		3.00 ea	2.604 ch/ea	60.19 /ch	8	470	124.00 /ea	372	-	-	-	-	-	-	842	335	1,178
Motor control center, for push button, add per starter	CNTAC -1 &-3	2.00 ea	2.604 ch/ea	60.19 /ch	5	313	124.00 /ea	248	-	-	-	-	-	-	561	224	785
Motor control center, for auxiliary contacts, add per starter	CNTAC -4	1.00 ea	2.604 ch/ea	60.19 /ch	3	157	259.00 /ea	259	-	-	-	-	-	-	416	172	588
Variable frequency drives, enclosed, 460 volt, 10 HP motor size, NEMA 1	STP-VFD-1	1.00 ea	62.189 ch/ea	60.19 /ch	62	3,743	2,025.00 /ea	2,025	-	-	-	-	-	-	5,768	2,254	8,022
Variable frequency drives, enclosed, 460 volt, 15 HP motor size, NEMA 1	STP-VFD-4	1.00 ea	46.816 ch/ea	120.38 /ch	94	5,636	2,325.00 /ea	2,325	-	-	-	-	-	-	7,961	3,072	11,033
Variable frequency drives, enclosed, 460 volt, 25 HP motor size, NEMA 1	STP-VFD-3	1.00 ea	62.189 ch/ea	120.38 /ch	124	7,486	4,025.00 /ea	4,025	-	-	-	-	-	-	11,511	4,497	16,008
Leak Detection Systems, liquid phase detection	LDSTA-1, 2	2.00 ea	20.833 ch/ea	60.19 /ch	42	2,508	760.00 /ea	1,520	-	-	-	-	-	-	4,028	1,583	5,611
LS15030513 Electrical					1,060	63,800		23,063							86,863	33,328	120,191
LS15030613 PPE																	
Modesty Pant (green) Reuse	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 288 each per year.	160.00 ea		-		-	-	-	2.45 /ea	392	-	-	-	-	392	187	579
Modesty Shirt (green) Reuse	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 288 each per year.	160.00 ea		-		-	-	-	2.20 /ea	352	-	-	-	-	352	168	520
Tee Shirt Reuse	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 288 each per year.	160.00 ea		-		-	-	-	2.25 /ea	360	-	-	-	-	360	172	532
Underware Reuse	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 288 each per year.	160.00 ea		-		-	-	-	1.25 /ea	200	-	-	-	-	200	95	295
Socks - pair Reuse	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 288 each per year.	160.00 ea		-		-	-	-	0.50 /ea	80	-	-	-	-	80	38	118
Hard hat Reuse	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 288 each per year.	5.00 ea		-		-	-	-	6.50 /ea	33	-	-	-	-	33	15	48

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS15030613 PPE																	
Safety Shoes Reuse	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 288 each per year.	5.00 ea		-		-	-	-	47.80 /ea	239	-	-	-	-	239	114	353
Yellow coveralls - Disposable	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 138,240 each per year.	500.00 ea		-		-	-	-	25.00 /ea	12,500	-	-	-	-	12,500	5,958	18,458
Yellow Booties - Disposable	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 138,240 each per year.	500.00 ea		-		-	-	-	1.00 /ea	500	-	-	-	-	500	238	738
Rubber Overshoe - Disposable	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 138,240 each per year.	500.00 ea		-		-	-	-	9.00 /ea	4,500	-	-	-	-	4,500	2,145	6,645
Skull cap - Disposable	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 138,240 each per year.	500.00 ea		-		-	-	-	2.00 /ea	1,000	-	-	-	-	1,000	477	1,477
Hood - Disposable	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 138,240 each per year.	500.00 ea		-		-	-	-	7.50 /ea	3,750	-	-	-	-	3,750	1,787	5,537
Cotton Liners- (gloves) Disposable	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 138,240 each per year.	500.00 ea		-		-	-	-	0.40 /ea	200	-	-	-	-	200	95	295
Rubber gloves - Disposable	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 276,480 each per year.	500.00 ea		-		-	-	-	9.00 /ea	4,500	-	-	-	-	4,500	2,145	6,645
Respirator/Filters	Lanc Industries - Tim Wiest - 425-823-6634 Average cost for size range S-4XL based on 288 each per year.	1,000.00 ea		-		-	-	-	10.78 /ea	10,780	-	-	-	-	10,780	5,138	15,918
Laundry Reuse- Level C	Based on Radiological Contamanated Items UniTech Services Group Subcontract No 00500573 @ ICP	40.00 ea		-		-	-	-	7.73 /ea	309	-	-	-	-	309	147	457
LS15030613 PPE										39,695					39,695	18,920	58,615
FY13 Fiscal Year 2013					**2,842**	**162,280**		**65,903**		**39,695**		**4,567**			**272,445**	**108,943**	**381,388**
.15.03 Bldg. Modifications					**2,842**	**162,280**		**65,903**		**39,695**		**4,567**			**272,445**	**108,943**	**381,388**
.15 Construction					31,459	2,030,622		2,347,434		47,787		57,048		3,380	4,486,271	2,311,177	6,797,449
.16 Start up & Testing																	
.16.01 Start up & Testing																	
FY13 Fiscal Year 2013																	
LS16160113 CORAMI Evalation																	
Nuclear Engineers		2.00 wk	40.000 ch/wk	94.95 /ch	80	7,596	-	-	-	-	-	-	-	-	7,596	1,380	8,976
Quality Control Engineers		2.00 wk	40.000 ch/wk	75.25 /ch	80	6,020	-	-	-	-	-	-	-	-	6,020	1,094	7,114
Safety Engineer		2.00 wk	40.000 ch/wk	71.00 /ch	80	5,680	-	-	-	-	-	-	-	-	5,680	1,032	6,712
LS16160113 CORAMI Evalation					240	19,296									19,296	3,505	22,801
FY13 Fiscal Year 2013					**240**	**19,296**									**19,296**	**3,505**	**22,801**
.16.01 Start up & Testing					**240**	**19,296**									**19,296**	**3,505**	**22,801**
.16.02 Procedure Development																	
FY12 Fiscal Year 2012																	
LS16020412 NCO Support Prior to ORR																	
NCO's	4ea K Baisin	26.00 wk	138.400 ch/wk	54.70 /ch	3,598	196,832	-	-	-	-	-	-	-	-	196,832	31,575	228,408
NCO's	4ea T Plant	26.00 wk	138.400 ch/wk	54.70 /ch	3,598	196,832	-	-	-	-	-	-	-	-	196,832	31,575	228,408
LS16020412 NCO Support Prior to ORR					7,197	393,665									393,665	63,151	456,816
FY12 Fiscal Year 2012					**7,197**	**393,665**									**393,665**	**63,151**	**456,816**
FY13 Fiscal Year 2013																	
LS16020413 NCO Support during ORR																	
NCO's	4ea K Baisin	52.00 wk	138.400 ch/wk	54.70 /ch	7,197	393,665	-	-	-	-	-	-	-	-	393,665	71,508	465,173
NCO's	4ea T Plant	52.00 wk	138.400 ch/wk	54.70 /ch	7,197	393,665	-	-	-	-	-	-	-	-	393,665	71,508	465,173
LS16020413 NCO Support during ORR					14,394	787,330									787,330	143,017	930,347
LS16160213 Procedure Development																	
Nuclear Engineers		3.00 wk	40.000 ch/wk	94.95 /ch	120	11,394	-	-	-	-	-	-	-	-	11,394	2,070	13,464
Quality Control Engineers		3.00 wk	40.000 ch/wk	75.25 /ch	120	9,030	-	-	-	-	-	-	-	-	9,030	1,640	10,670
Safety Engineer		3.00 wk	40.000 ch/wk	71.00 /ch	120	8,520	-	-	-	-	-	-	-	-	8,520	1,548	10,068
Industrial Hygienists		2.00 wk	40.000 ch/wk	72.95 /ch	80	5,836	-	-	-	-	-	-	-	-	5,836	1,060	6,896
Technical Writers & Editors		2.00 wk	40.000 ch/wk	66.18 /ch	80	5,294	-	-	-	-	-	-	-	-	5,294	962	6,256
LS16160213 Procedure Development					520	40,074									40,074	7,279	47,354
FY13 Fiscal Year 2013					**14,914**	**827,404**									**827,404**	**150,296**	**977,701**
.16.02 Procedure Development					**22,110**	**1,221,069**									**1,221,069**	**213,447**	**1,434,516**
.16.03 Readiness Activities / Planning																	
FY13 Fiscal Year 2013																	
LS16030113 Crew Training and ORR Preparations																	
Milwrights	2ea	52.00 wk	47.997 ch/wk	57.58 /ch	2,496	143,711	/wk	-	-	-	-	-	-	-	143,711	26,105	169,816
Riggers	2ea	52.00 wk	47.187 ch/wk	57.89 /ch	2,454	142,047	/wk	-	-	-	-	-	-	-	142,047	25,803	167,850
First Line Supervisors	2.5 ea	52.00 wk	43.476 ch/wk	78.54 /ch	2,261	177,559	-	-	-	-	-	-	-	-	177,559	32,253	209,812
NCO's	10ea	52.00 wk	249.697 ch/wk	54.70 /ch	12,984	710,237	-	-	-	-	-	-	-	-	710,237	129,013	839,250
Crane Equipment Operators	1 ea	52.00 wk	24.000 ch/wk	56.91 /ch	1,248	71,024	-	-	-	-	-	-	-	-	71,024	12,901	83,925
Health Physics Technicians	4.5 ea	52.00 wk	115.034 ch/wk	53.43 /ch	5,982	319,607	-	-	-	-	-	-	-	-	319,607	58,056	377,662
Health Physics Technicians Supervisor	.5 ea	52.00 wk	8.695 ch/wk	78.54 /ch	452	35,512	-	-	-	-	-	-	-	-	35,512	6,451	41,963
LS16030113 Crew Training and ORR Preparations					27,577	1,599,697									1,599,697	290,582	1,890,278
LS16160313 Readiness Activities / Planning																	
Nuclear Engineers		5.00 wk	40.000 ch/wk	94.95 /ch	200	18,990	-	-	-	-	-	-	-	-	18,990	3,450	22,440
Quality Control Engineers		5.00 wk	40.000 ch/wk	75.25 /ch	200	15,050	-	-	-	-	-	-	-	-	15,050	2,734	17,784
Safety Engineer		5.00 wk	40.000 ch/wk	71.00 /ch	200	14,200	-	-	-	-	-	-	-	-	14,200	2,579	16,779
Planner/Scheduler/Estimators		3.00 wk	40.000 ch/wk	86.56 /ch	120	10,387	-	-	-	-	-	-	-	-	10,387	1,887	12,274
LS16160313 Readiness Activities / Planning					720	58,627									58,627	10,650	69,277
FY13 Fiscal Year 2013					**28,597**	**1,658,324**									**1,658,324**	**301,231**	**1,959,555**

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
.16.03 Readiness Activities / Planning					**28,597**	**1,658,324**									**1,658,324**	**301,231**	**1,959,555**
.16.04 System Test																	
FY13 Fiscal Year 2013																	
LS16160413 System Test																	
Electrical Engineers		8.00 wk	40.000 ch/wk	79.21 /ch	320	25,347	-	-	-	-	-	-	-	-	25,347	4,604	29,951
Mechanical Engineers		8.00 wk	40.000 ch/wk	85.74 /ch	320	27,437	-	-	-	-	-	-	-	-	27,437	4,984	32,421
Plant Engineers		8.00 wk	40.000 ch/wk	68.98 /ch	320	22,074	-	-	-	-	-	-	-	-	22,074	4,010	26,083
Quality Control Engineers		8.00 wk	40.000 ch/wk	75.25 /ch	320	24,080	-	-	-	-	-	-	-	-	24,080	4,374	28,454
Construction Engineers		8.00 wk	40.000 ch/wk	100.10 /ch	320	32,032	-	-	-	-	-	-	-	-	32,032	5,819	37,851
LS16160413 System Test					1,600	130,970									130,970	23,790	154,760
FY13 Fiscal Year 2013					**1,600**	**130,970**									**130,970**	**23,790**	**154,760**
.16.04 System Test					**1,600**	**130,970**									**130,970**	**23,790**	**154,760**
.16.05 Start Up																	
FY13 Fiscal Year 2013																	
LS16160513 Start Up																	
Electrician		4.00 wk	40.000 ch/wk	60.19 /ch	160	9,630	-	-	-	-	-	-	-	-	9,630	1,749	11,380
Nuclear Engineers		4.00 wk	40.000 ch/wk	94.95 /ch	160	15,192	-	-	-	-	-	-	-	-	15,192	2,760	17,952
Plant Engineers		4.00 wk	40.000 ch/wk	68.98 /ch	160	11,037	-	-	-	-	-	-	-	-	11,037	2,005	13,042
Quality Control Engineers		4.00 wk	40.000 ch/wk	75.25 /ch	160	12,040	-	-	-	-	-	-	-	-	12,040	2,187	14,227
Safety Engineer		4.00 wk	40.000 ch/wk	71.00 /ch	160	11,360	-	-	-	-	-	-	-	-	11,360	2,064	13,424
Material Moving Equipment Operators		4.00 wk	40.000 ch/wk	56.91 /ch	160	9,106	-	-	-	-	-	-	-	-	9,106	1,654	10,760
Nuclear Waste Process Operator		4.00 wk	40.000 ch/wk	58.05 /ch	160	9,288	-	-	-	-	-	-	-	-	9,288	1,687	10,975
Utilities System Operators		4.00 wk	40.000 ch/wk	49.54 /ch	160	7,926	-	-	-	-	-	-	-	-	7,926	1,440	9,366
Other Operators		4.00 wk	40.000 ch/wk	57.10 /ch	160	9,136	-	-	-	-	-	-	-	-	9,136	1,660	10,796
LS16160513 Start Up					1,440	94,715									94,715	17,205	111,920
FY13 Fiscal Year 2013					**1,440**	**94,715**									**94,715**	**17,205**	**111,920**
.16.05 Start Up					**1,440**	**94,715**									**94,715**	**17,205**	**111,920**
.16 Start up & Testing					53,987	3,124,374									3,124,374	559,178	3,683,553
.17 RISK																	
.17.01 RISK																	
FY10 Fiscal Year 2010																	
LS17170110 RISK																	
RISK		1.00 ls		0.00 /ls		0	0.00 /ls	0	-	-	-	-	738,354.00 /ls	738,354	738,354	88,025	826,379
LS17170110 RISK														738,354	738,354	88,025	826,379
FY10 Fiscal Year 2010														**738,354**	**738,354**	**88,025**	**826,379**
FY11 Fiscal Year 2011																	
LS17170111 RISK																	
RISK		1.00 ls		0.00 /ls		0	0.00 /ls	0	-	-	-	-	1,146,485.00 /ls	1,146,485	1,146,485	160,070	1,306,555
LS17170111 RISK														1,146,485	1,146,485	160,070	1,306,555
FY11 Fiscal Year 2011														**1,146,485**	**1,146,485**	**160,070**	**1,306,555**
FY12 Fiscal Year 2012																	
LS17170112 RISK																	
RISK		1.00 ls		0.00 /ls		0	0.00 /ls	0	-	-	-	-	1,642,084.00 /ls	1,642,084	1,642,084	263,420	1,905,504
LS17170112 RISK														1,642,084	1,642,084	263,420	1,905,504
FY12 Fiscal Year 2012														**1,642,084**	**1,642,084**	**263,420**	**1,905,504**
FY13 Fiscal Year 2013																	
LS17170113 RISK																	
RISK		1.00 ls		0.00 /ls		0	0.00 /ls	0	-	-	-	-	2,736,534.00 /ls	2,736,534	2,736,534	497,086	3,233,620
LS17170113 RISK														2,736,534	2,736,534	497,086	3,233,620
FY13 Fiscal Year 2013														**2,736,534**	**2,736,534**	**497,086**	**3,233,620**
.17.01 RISK														**6,263,457**	**6,263,457**	**1,008,600**	**7,272,057**
.17 RISK														6,263,457	6,263,457	1,008,600	7,272,057
.18 Operations and Maintenance																	
.18.01 Operations																	
FY14 Fiscal Year 2014																	
LS18010114 XAGO operation & STSC Loading																	
Millwrights	2ea	52.00 wk	47.997 ch/wk	57.58 /ch	2,496	143,711	/wk	-	-	-	-	-	-	-	143,711	29,216	172,928
Riggers	2ea	52.00 wk	47.187 ch/wk	57.89 /ch	2,454	142,047	/wk	-	-	-	-	-	-	-	142,047	28,878	170,925
First Line Supervisors	2.5 ea	52.00 wk	43.476 ch/wk	78.54 /ch	2,261	177,559	-	-	-	-	-	-	-	-	177,559	36,097	213,657
NCO's	10ea	52.00 wk	249.697 ch/wk	54.70 /ch	12,984	710,237	-	-	-	-	-	-	-	-	710,237	144,390	854,626
Crane Equipment Operators	1 ea	52.00 wk	24.000 ch/wk	56.91 /ch	1,248	71,024	-	-	-	-	-	-	-	-	71,024	14,439	85,463
Health Physics Technicians	4.5 ea	52.00 wk	115.034 ch/wk	53.43 /ch	5,982	319,607	-	-	-	-	-	-	-	-	319,607	64,975	384,582
Health Physics Technicians Supervisor	.5 ea	52.00 wk	8.695 ch/wk	78.54 /ch	452	35,512	-	-	-	-	-	-	-	-	35,512	7,220	42,731
LS18010114 XAGO operation & STSC Loading					27,877	1,599,697									1,599,697	325,215	1,924,912
LS18010314 STSC Unloading @ Tplant																	
Millwrights	2 ea	52.00 wk	47.997 ch/wk	57.58 /ch	2,496	143,711	-	-	-	-	-	-	-	-	143,711	29,216	172,927
Structural or Metal Worker	2 ea	52.00 wk	47.997 ch/wk	57.89 /ch	2,496	144,484	-	-	-	-	-	-	-	-	144,484	29,373	173,858
Quality Control Engineers	1 ea	52.00 wk	24.000 ch/wk	75.25 /ch	1,248	93,912	-	-	-	-	-	-	-	-	93,912	19,092	113,004
First Line Supervisors	1 ea	52.00 wk	24.000 ch/wk	78.54 /ch	1,248	98,018	-	-	-	-	-	-	-	-	98,018	19,927	117,945
Industrial Hygienists	1 ea	52.00 wk	24.000 ch/wk	72.95 /ch	1,248	91,042	-	-	-	-	-	-	-	-	91,042	18,509	109,550
Material Moving Equipment Operators	1 ea	52.00 wk	16.000 ch/wk	56.91 /ch	832	47,349	-	-	-	-	-	-	-	-	47,349	9,626	56,975
Other Operators	2 ea	52.00 wk	47.997 ch/wk	57.10 /ch	2,496	142,513	-	-	-	-	-	-	-	-	142,513	28,973	171,485
Health Physics Technicians	3 ea	52.00 wk	72.000 ch/wk	53.43 /ch	3,744	200,042	-	-	-	-	-	-	-	-	200,042	40,668	240,710
LS18010314 STSC Unloading @ Tplant					15,808	961,070									961,070	195,384	1,156,454
FY14 Fiscal Year 2014					**43,684**	**2,560,767**									**2,560,767**	**520,599**	**3,081,366**
FY15 Fiscal Year 2015																	
LS18010115 XAGO operation & STSC Loading																	
Milwrights	2ea	8.00 wk	47.997 ch/wk	57.58 /ch	384	22,109	/wk	-	-	-	-	-	-	-	22,109	2,194	24,303
Riggers	2ea	8.00 wk	47.187 ch/wk	57.89 /ch	377	21,853	/wk	-	-	-	-	-	-	-	21,853	2,168	24,022
First Line Supervisors	2.5 ea	8.00 wk	43.476 ch/wk	78.54 /ch	348	27,317	-	-	-	-	-	-	-	-	27,317	2,710	30,027
NCO's	10ea	8.00 wk	249.697 ch/wk	54.70 /ch	1,998	109,267	-	-	-	-	-	-	-	-	109,267	10,841	120,108
Crane Equipment Operators	1 ea	8.00 wk	24.000 ch/wk	56.91 /ch	192	10,927	-	-	-	-	-	-	-	-	10,927	1,084	12,011
Health Physics Technicians	4.5 ea	8.00 wk	115.034 ch/wk	53.43 /ch	920	49,170	-	-	-	-	-	-	-	-	49,170	4,879	54,049
Health Physics Technicians Supervisor	.5 ea	8.00 wk	8.695 ch/wk	78.54 /ch	70	5,463	-	-	-	-	-	-	-	-	5,463	542	6,005

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS18010115 XAGO operation & STSC Loading					4,289	246,107									246,107	24,418	270,525
LS18010314 STSC Unloading @ Tplant																	
Millwrights	2 ea	8.00 wk	47.997 ch/wk	57.58 /ch	384	22,109	-	-	-	-	-	-	-	-	22,109	2,194	24,303
Structural or Metal Worker	2 ea	8.00 wk	47.997 ch/wk	57.89 /ch	384	22,228	-	-	-	-	-	-	-	-	22,228	2,205	24,434
Quality Control Engineers	1 ea	8.00 wk	24.000 ch/wk	75.25 /ch	192	14,448	-	-	-	-	-	-	-	-	14,448	1,434	15,882
First Line Supervisors	1 ea	8.00 wk	24.000 ch/wk	78.54 /ch	192	15,080	-	-	-	-	-	-	-	-	15,080	1,496	16,576
Industrial Hygienists	1 ea	8.00 wk	24.000 ch/wk	72.95 /ch	192	14,006	-	-	-	-	-	-	-	-	14,006	1,390	15,396
Material Moving Equipment Operators	1 ea	8.00 wk	16.000 ch/wk	56.91 /ch	128	7,284	-	-	-	-	-	-	-	-	7,284	723	8,007
Other Operators	2 ea	8.00 wk	47.997 ch/wk	57.10 /ch	384	21,925	-	-	-	-	-	-	-	-	21,925	2,175	24,100
Health Physics Technicians	3 ea	8.00 wk	72.000 ch/wk	53.43 /ch	576	30,776	-	-	-	-	-	-	-	-	30,776	3,054	33,829
LS18010314 STSC Unloading @ Tplant					2,432	147,857									147,857	14,670	162,527
FY15 Fiscal Year 2015					**6,721**	**393,964**									**393,964**	**39,088**	**433,052**
.18.01 Operations					**50,405**	**2,954,731**									**2,954,731**	**559,687**	**3,514,418**
.18.02 Transportation																	
FY14 Fiscal Year 2014																	
LS18020114 Transport																	
Teamster Subcontract straight time	Fluor Hanford -3 teamster 3days (96mh/wk)	26.00 wk		/wk	1,040		/wk		43.35 /ch	108,202	-	-	-	-	108,202	53,917	162,118
Teamster Subcontract over time	Fluor Hanford - 3 teamster 3days (12mh/wk)	26.00 wk		/wk	1,040		/wk		65.03 /ch	20,289	-	-	-	-	20,289	10,110	30,399
LS18020114 Transport					2,080					128,491					128,491	64,027	192,518
FY14 Fiscal Year 2014					**2,080**					**128,491**					**128,491**	**64,027**	**192,518**
FY15 Fiscal Year 2015																	
LS18020115 Transport																	
Teamster Subcontract straight time	Fluor Hanford -3 teamster 3days (96mh/wk)	4.00 wk		/wk	160		/wk		43.35 /ch	16,646	-	-	-	-	16,646	6,562	23,209
Teamster Subcontract over time	Fluor Hanford - 3 teamster 3days (12mh/wk)	4.00 wk		/wk	160		/wk		65.03 /ch	3,121	-	-	-	-	3,121	1,231	4,352
LS18020115 Transport					320					19,768					19,768	7,793	27,561
FY15 Fiscal Year 2015					**320**					**19,768**					**19,768**	**7,793**	**27,561**
.18.02 Transportation					**2,400**					**148,259**					**148,259**	**71,820**	**220,078**
.18.03 Maintenance																	
FY10 Fiscal Year 2010																	
LS18030210 K West Basin Min Safe																	
Material & Equipment		1.00 ls		/ls			2,931,000.00 /ls	2,931,000	/ls		/ls		-	-	2,931,000	1,457,346	4,388,346
PNL		1.00 ls		/ls			/ls		13,300.00 /ls	13,300	/ls		-	-	13,300	5,509	18,809
Other Hanford Contractors		1.00 ls		/ls			/ls		352,900.00 /ls	352,900	/ls		-	-	352,900	146,177	499,077
Crane & Rigging		1.00 ls		/ls			/ls		113,100.00 /ls	113,100	/ls		-	-	113,100	46,848	159,948
Taxes & Licenses		1.00 ls		/ls			/ls		/ls		/ls		62,300.00 /ls	62,300	62,300	25,806	88,106
Contract Labor		1.00 ls		/ls			/ls		175,800.00 /ls	175,800	/ls		-	-	175,800	72,820	248,620
Freight		1.00 ls		/ls			/ls		14,100.00 /ls	14,100	/ls		-	-	14,100	5,840	19,940
Carpenter		0.13 ea	######## ch/ea	51.18 /ch	225	11,516	-	-	-	-	-	-	-	-	11,516	1,373	12,888
Electrician		1.00 ea	######## ch/ea	60.19 /ch	1,800	108,342	-	-	-	-	-	-	-	-	108,342	12,916	121,258
Millwrights		0.25 ea	######## ch/ea	57.58 /ch	450	25,911	-	-	-	-	-	-	-	-	25,911	3,089	29,000
Painters		0.13 ea	######## ch/ea	57.89 /ch	225	13,025	-	-	-	-	-	-	-	-	13,025	1,553	14,578
Plumber or Pipefitter		0.25 ea	######## ch/ea	55.36 /ch	450	24,912	-	-	-	-	-	-	-	-	24,912	2,970	27,882
Chemical Engineers- E010		0.25 ea	######## ch/ea	81.66 /ch	450	36,747	-	-	-	-	-	-	-	-	36,747	4,381	41,128
Civil Engineers		0.50 ea	######## ch/ea	92.33 /ch	900	83,097	-	-	-	-	-	-	-	-	83,097	9,907	93,004
Electrical Engineers		0.50 ea	######## ch/ea	79.21 /ch	900	71,289	-	-	-	-	-	-	-	-	71,289	8,499	79,788
Environmental Engineers		0.13 ea	######## ch/ea	82.98 /ch	225	18,671	-	-	-	-	-	-	-	-	18,671	2,226	20,896
Mechanical Engineers		0.06 ea	######## ch/ea	85.74 /ch	108	9,260	-	-	-	-	-	-	-	-	9,260	1,104	10,364
Nuclear Engineers		0.08 ea	######## ch/ea	94.95 /ch	144	13,673	-	-	-	-	-	-	-	-	13,673	1,630	15,303
Plant Engineers		2.25 ea	######## ch/ea	68.98 /ch	4,050	279,369	-	-	-	-	-	-	-	-	279,369	33,306	312,675
Quality Control Engineers		0.20 ea	######## ch/ea	75.25 /ch	360	27,090	-	-	-	-	-	-	-	-	27,090	3,230	30,320
Safety Engineer		1.10 ea	######## ch/ea	71.00 /ch	1,980	140,580	-	-	-	-	-	-	-	-	140,580	16,760	157,340
Other Engineers		1.30 ea	######## ch/ea	106.23 /ch	2,340	248,578	-	-	-	-	-	-	-	-	248,578	29,635	278,213
Construction Engineers		0.01 ea	######## ch/ea	100.10 /ch	18	1,802	-	-	-	-	-	-	-	-	1,802	215	2,017
Administrative Assistants		1.50 ea	######## ch/ea	47.45 /ch	2,700	128,115	-	-	-	-	-	-	-	-	128,115	15,274	143,389
Office Clerks (General)		1.00 ea	######## ch/ea	36.74 /ch	1,800	66,132	-	-	-	-	-	-	-	-	66,132	7,884	74,016
Secretaries		1.00 ea	######## ch/ea	36.30 /ch	1,800	65,340	-	-	-	-	-	-	-	-	65,340	7,790	73,130
First Line Supervisors		1.00 ea	######## ch/ea	78.54 /ch	1,800	141,372	-	-	-	-	-	-	-	-	141,372	16,854	158,226
Managers & Executives		2.90 ea	######## ch/ea	102.62 /ch	5,220	535,676	-	-	-	-	-	-	-	-	535,676	63,862	599,539
Planner/Scheduler/Estimators		0.75 ea	######## ch/ea	86.56 /ch	1,350	116,856	-	-	-	-	-	-	-	-	116,856	13,931	130,787
Health Physicists		0.80 ea	######## ch/ea	76.01 /ch	1,440	109,454	-	-	-	-	-	-	-	-	109,454	13,049	122,503
Industrial Hygienists		0.50 ea	######## ch/ea	72.95 /ch	900	65,655	-	-	-	-	-	-	-	-	65,655	7,827	73,482
Trainer		1.00 ea	######## ch/ea	75.63 /ch	1,800	136,134	-	-	-	-	-	-	-	-	136,134	16,230	152,364
Technical Writers & Editors		0.85 ea	######## ch/ea	66.18 /ch	1,530	101,255	-	-	-	-	-	-	-	-	101,255	12,071	113,327
Other Professionals		0.85 ea	######## ch/ea	89.60 /ch	1,530	137,088	-	-	-	-	-	-	-	-	137,088	16,343	153,431
Buyers/Procurement/Contracting		0.01 ea	######## ch/ea	70.24 /ch	18	1,264	-	-	-	-	-	-	-	-	1,264	151	1,415
Nuclear Waste Process Operator		9.15 ea	######## ch/ea	58.05 /ch	16,470	956,084	-	-	-	-	-	-	-	-	956,084	113,982	1,070,066
Environmental Scientists		0.50 ea	######## ch/ea	71.72 /ch	900	64,548	-	-	-	-	-	-	-	-	64,548	7,695	72,243
Technicians		0.50 ea	######## ch/ea	56.63 /ch	900	50,967	-	-	-	-	-	-	-	-	50,967	6,076	57,043
Drafters		0.25 ea	######## ch/ea	99.37 /ch	450	44,717	-	-	-	-	-	-	-	-	44,717	5,331	50,048
Health Physics Technicians		7.50 ea	######## ch/ea	53.43 /ch	13,500	721,305	-	-	-	-	-	-	-	-	721,305	85,992	807,297
Instrument & Control Tech		0.05 ea	######## ch/ea	60.48 /ch	90	5,443	-	-	-	-	-	-	-	-	5,443	649	6,092
Motor Carrier Services		1.00 ls		/ls			/ls		139.90 /ls	140	-	-	-	-	140	17	157
LS18030210 K West Basin Min Safe					68,823	4,561,267		2,931,000		669,340				62,300	8,223,907	2,304,147	10,528,054
FY10 Fiscal Year 2010					**68,823**	**4,561,267**		**2,931,000**		**669,340**				**62,300**	**8,223,907**	**2,304,147**	**10,528,054**
FY11 Fiscal Year 2011																	
LS18030211 K West Basin Min Safe																	
Material & Equipment		1.00 ls		/ls			2,931,000.00 /ls	2,931,000	/ls		/ls		-	-	2,931,000	1,517,138	4,448,138
PNL		1.00 ls		/ls			/ls		13,300.00 /ls	13,300	/ls		-	-	13,300	5,780	19,080
Other Hanford Contractors		1.00 ls		/ls			/ls		352,900.00 /ls	352,900	/ls		-	-	352,900	153,377	506,277
Crane & Rigging		1.00 ls		/ls			/ls		113,100.00 /ls	113,100	/ls		-	-	113,100	49,155	162,255
Taxes & Licenses		1.00 ls		/ls			/ls		/ls		/ls		62,300.00 /ls	62,300	62,300	27,077	89,377
Contract Labor		1.00 ls		/ls			/ls		175,800.00 /ls	175,800	/ls		-	-	175,800	76,406	252,206
Freight		1.00 ls		/ls			/ls		14,100.00 /ls	14,100	/ls		-	-	14,100	6,128	20,228
Carpenter		0.13 ea	######## ch/ea	51.18 /ch	225	11,516	-	-	-	-	-	-	-	-	11,516	1,608	13,123
Electrician		1.00 ea	######## ch/ea	60.19 /ch	1,800	108,342	-	-	-	-	-	-	-	-	108,342	15,126	123,468
Millwrights		0.25 ea	######## ch/ea	57.58 /ch	450	25,911	-	-	-	-	-	-	-	-	25,911	3,618	29,529

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS18030211 K West Basin Min Safe																	
Painters		0.13 ea	######## ch/ea	57.89 /ch	225	13,025	-	-	-	-	-	-	-	-	13,025	1,819	14,844
Plumber or Pipefitter		0.25 ea	######## ch/ea	55.36 /ch	450	24,912	-	-	-	-	-	-	-	-	24,912	3,478	28,390
Chemical Engineers- E010		0.25 ea	######## ch/ea	81.66 /ch	450	36,747	-	-	-	-	-	-	-	-	36,747	5,131	41,878
Civil Engineers		0.50 ea	######## ch/ea	92.33 /ch	900	83,097	-	-	-	-	-	-	-	-	83,097	11,602	94,699
Electrical Engineers		0.50 ea	######## ch/ea	79.21 /ch	900	71,289	-	-	-	-	-	-	-	-	71,289	9,953	81,242
Environmental Engineers		0.13 ea	######## ch/ea	82.98 /ch	225	18,671	-	-	-	-	-	-	-	-	18,671	2,607	21,277
Mechanical Engineers		0.06 ea	######## ch/ea	85.74 /ch	108	9,260	-	-	-	-	-	-	-	-	9,260	1,293	10,553
Nuclear Engineers		0.08 ea	######## ch/ea	94.95 /ch	144	13,673	-	-	-	-	-	-	-	-	13,673	1,909	15,582
Plant Engineers		2.25 ea	######## ch/ea	68.98 /ch	4,050	279,369	-	-	-	-	-	-	-	-	279,369	39,005	318,374
Quality Control Engineers		0.20 ea	######## ch/ea	75.25 /ch	360	27,090	-	-	-	-	-	-	-	-	27,090	3,782	30,872
Safety Engineer		1.10 ea	######## ch/ea	71.00 /ch	1,980	140,580	-	-	-	-	-	-	-	-	140,580	19,627	160,207
Other Engineers		1.30 ea	######## ch/ea	106.23 /ch	2,340	248,578	-	-	-	-	-	-	-	-	248,578	34,706	283,284
Construction Engineers		0.01 ea	######## ch/ea	100.10 /ch	18	1,802	-	-	-	-	-	-	-	-	1,802	252	2,053
Administrative Assistants		1.50 ea	######## ch/ea	47.45 /ch	2,700	128,115	-	-	-	-	-	-	-	-	128,115	17,887	146,002
Office Clerks (General)		1.00 ea	######## ch/ea	36.74 /ch	1,800	66,132	-	-	-	-	-	-	-	-	66,132	9,233	75,365
Secretaries		1.00 ea	######## ch/ea	36.30 /ch	1,800	65,340	-	-	-	-	-	-	-	-	65,340	9,123	74,463
First Line Supervisors		1.00 ea	######## ch/ea	78.54 /ch	1,800	141,372	-	-	-	-	-	-	-	-	141,372	19,738	161,110
Managers & Executives		2.90 ea	######## ch/ea	102.62 /ch	5,220	535,676	-	-	-	-	-	-	-	-	535,676	74,790	610,466
Planner/Scheduler/Estimators		0.75 ea	######## ch/ea	86.56 /ch	1,350	116,856	-	-	-	-	-	-	-	-	116,856	16,315	133,171
Health Physicists		0.80 ea	######## ch/ea	76.01 /ch	1,440	109,454	-	-	-	-	-	-	-	-	109,454	15,282	124,736
Industrial Hygienists		0.50 ea	######## ch/ea	72.95 /ch	900	65,655	-	-	-	-	-	-	-	-	65,655	9,167	74,822
Trainer		1.00 ea	######## ch/ea	75.63 /ch	1,800	136,134	-	-	-	-	-	-	-	-	136,134	19,007	155,141
Technical Writers & Editors		0.85 ea	######## ch/ea	66.18 /ch	1,530	101,255	-	-	-	-	-	-	-	-	101,255	14,137	115,392
Other Professionals		0.85 ea	######## ch/ea	89.60 /ch	1,530	137,088	-	-	-	-	-	-	-	-	137,088	19,140	156,228
Buyers/Procurement/Contracting		0.01 ea	######## ch/ea	70.24 /ch	18	1,264	-	-	-	-	-	-	-	-	1,264	177	1,441
Nuclear Waste Process Operator		9.15 ea	######## ch/ea	58.05 /ch	16,470	956,084	-	-	-	-	-	-	-	-	956,084	133,486	1,089,570
Environmental Scientists		0.50 ea	######## ch/ea	71.72 /ch	900	64,548	-	-	-	-	-	-	-	-	64,548	9,012	73,560
Technicians		0.50 ea	######## ch/ea	56.63 /ch	900	50,967	-	-	-	-	-	-	-	-	50,967	7,116	58,083
Drafters		0.25 ea	######## ch/ea	99.37 /ch	450	44,717	-	-	-	-	-	-	-	-	44,717	6,243	50,960
Health Physics Technicians		7.50 ea	######## ch/ea	53.43 /ch	13,500	721,305	-	-	-	-	-	-	-	-	721,305	100,707	822,012
Instrument & Control Tech		0.05 ea	######## ch/ea	60.48 /ch	90	5,443	-	-	-	-	-	-	-	-	5,443	760	6,203
Motor Carrier Services		1.00 ls		/ls			/ls		139.90 /ls	140					140	20	159
LS18030211 K West Basin Min Safe					68,823	4,561,267		2,931,000		669,340				62,300	8,223,907	2,471,915	10,695,822
FY11 Fiscal Year 2011					**68,823**	**4,561,267**		**2,931,000**		**669,340**				**62,300**	**8,223,907**	**2,471,915**	**10,695,822**
FY12 Fiscal Year 2012																	
LS18030212 K West Basin Min Safe																	
Material & Equipment		1.00 ls		/ls			2,931,000.00 /ls	2,931,000	/ls		/ls		-	-	2,931,000	1,578,103	4,509,103
PNL		1.00 ls		/ls			/ls		13,300.00 /ls	13,300	/ls		-	-	13,300	6,057	19,357
Other Hanford Contractors		1.00 ls		/ls			/ls		352,900.00 /ls	352,900	/ls		-	-	352,900	160,717	513,617
Crane & Rigging		1.00 ls		/ls			/ls		113,100.00 /ls	113,100	/ls		-	-	113,100	51,508	164,608
Taxes & Licenses		1.00 ls		/ls			/ls		/ls		/ls		62,300.00 /ls	62,300	62,300	28,373	90,673
Contract Labor		1.00 ls		/ls			/ls		175,800.00 /ls	175,800	/ls		-	-	175,800	80,062	255,862
Freight		1.00 ls		/ls			/ls		14,100.00 /ls	14,100	/ls		-	-	14,100	6,421	20,521
Carpenter		0.13 ea	######## ch/ea	51.18 /ch	225	11,516	-	-	-	-	-	-	-	-	11,516	1,847	13,363
Electrician		1.00 ea	######## ch/ea	60.19 /ch	1,800	108,342	-	-	-	-	-	-	-	-	108,342	17,380	125,722
Millwrights		0.25 ea	######## ch/ea	57.58 /ch	450	25,911	-	-	-	-	-	-	-	-	25,911	4,157	30,068
Painters		0.13 ea	######## ch/ea	57.89 /ch	225	13,025	-	-	-	-	-	-	-	-	13,025	2,089	15,115
Plumber or Pipefitter		0.25 ea	######## ch/ea	55.36 /ch	450	24,912	-	-	-	-	-	-	-	-	24,912	3,996	28,908
Chemical Engineers- E010		0.25 ea	######## ch/ea	81.66 /ch	450	36,747	-	-	-	-	-	-	-	-	36,747	5,895	42,642
Civil Engineers		0.50 ea	######## ch/ea	92.33 /ch	900	83,097	-	-	-	-	-	-	-	-	83,097	13,330	96,427
Electrical Engineers		0.50 ea	######## ch/ea	79.21 /ch	900	71,289	-	-	-	-	-	-	-	-	71,289	11,436	82,725
Environmental Engineers		0.13 ea	######## ch/ea	82.98 /ch	225	18,671	-	-	-	-	-	-	-	-	18,671	2,995	21,666
Mechanical Engineers		0.06 ea	######## ch/ea	85.74 /ch	108	9,260	-	-	-	-	-	-	-	-	9,260	1,485	10,745
Nuclear Engineers		0.08 ea	######## ch/ea	94.95 /ch	144	13,673	-	-	-	-	-	-	-	-	13,673	2,193	15,866
Plant Engineers		2.25 ea	######## ch/ea	68.98 /ch	4,050	279,369	-	-	-	-	-	-	-	-	279,369	44,816	324,185
Quality Control Engineers		0.20 ea	######## ch/ea	75.25 /ch	360	27,090	-	-	-	-	-	-	-	-	27,090	4,346	31,436
Safety Engineer		1.10 ea	######## ch/ea	71.00 /ch	1,980	140,580	-	-	-	-	-	-	-	-	140,580	22,552	163,132
Other Engineers		1.30 ea	######## ch/ea	106.23 /ch	2,340	248,578	-	-	-	-	-	-	-	-	248,578	39,876	288,455
Construction Engineers		0.01 ea	######## ch/ea	100.10 /ch	18	1,802	-	-	-	-	-	-	-	-	1,802	289	2,091
Administrative Assistants		1.50 ea	######## ch/ea	47.45 /ch	2,700	128,115	-	-	-	-	-	-	-	-	128,115	20,552	148,667
Office Clerks (General)		1.00 ea	######## ch/ea	36.74 /ch	1,800	66,132	-	-	-	-	-	-	-	-	66,132	10,609	76,741
Secretaries		1.00 ea	######## ch/ea	36.30 /ch	1,800	65,340	-	-	-	-	-	-	-	-	65,340	10,482	75,822
First Line Supervisors		1.00 ea	######## ch/ea	78.54 /ch	1,800	141,372	-	-	-	-	-	-	-	-	141,372	22,679	164,051
Managers & Executives		2.90 ea	######## ch/ea	102.62 /ch	5,220	535,676	-	-	-	-	-	-	-	-	535,676	85,932	621,608
Planner/Scheduler/Estimators		0.75 ea	######## ch/ea	86.56 /ch	1,350	116,856	-	-	-	-	-	-	-	-	116,856	18,746	135,602
Health Physicists		0.80 ea	######## ch/ea	76.01 /ch	1,440	109,454	-	-	-	-	-	-	-	-	109,454	17,558	127,013
Industrial Hygienists		0.50 ea	######## ch/ea	72.95 /ch	900	65,655	-	-	-	-	-	-	-	-	65,655	10,532	76,187
Trainer		1.00 ea	######## ch/ea	75.63 /ch	1,800	136,134	-	-	-	-	-	-	-	-	136,134	21,838	157,972
Technical Writers & Editors		0.85 ea	######## ch/ea	66.18 /ch	1,530	101,255	-	-	-	-	-	-	-	-	101,255	16,243	117,499
Other Professionals		0.85 ea	######## ch/ea	89.60 /ch	1,530	137,088	-	-	-	-	-	-	-	-	137,088	21,991	159,079
Buyers/Procurement/Contracting		0.01 ea	######## ch/ea	70.24 /ch	18	1,264	-	-	-	-	-	-	-	-	1,264	203	1,467
Nuclear Waste Process Operator		9.15 ea	######## ch/ea	58.05 /ch	16,470	956,084	-	-	-	-	-	-	-	-	956,084	153,373	1,109,456
Environmental Scientists		0.50 ea	######## ch/ea	71.72 /ch	900	64,548	-	-	-	-	-	-	-	-	64,548	10,355	74,903
Technicians		0.50 ea	######## ch/ea	56.63 /ch	900	50,967	-	-	-	-	-	-	-	-	50,967	8,176	59,143
Drafters		0.25 ea	######## ch/ea	99.37 /ch	450	44,717	-	-	-	-	-	-	-	-	44,717	7,173	51,890
Health Physics Technicians		7.50 ea	######## ch/ea	53.43 /ch	13,500	721,305	-	-	-	-	-	-	-	-	721,305	115,710	837,015
Instrument & Control Tech		0.05 ea	######## ch/ea	60.48 /ch	90	5,443	-	-	-	-	-	-	-	-	5,443	873	6,316
Motor Carrier Services		1.00 ls		/ls			/ls		139.90 /ls	140					140	22	162
LS18030212 K West Basin Min Safe					68,823	4,561,267		2,931,000		669,340				62,300	8,223,907	2,642,972	10,866,879
FY12 Fiscal Year 2012					**68,823**	**4,561,267**		**2,931,000**		**669,340**				**62,300**	**8,223,907**	**2,642,972**	**10,866,879**
FY13 Fiscal Year 2013																	
LS18030213 K West Basin Min Safe																	
Material & Equipment		1.00 ls		/ls			2,931,000.00 /ls	2,931,000	/ls		/ls		-	-	2,931,000	1,640,328	4,571,328
PNL		1.00 ls		/ls			/ls		13,300.00 /ls	13,300	/ls		-	-	13,300	6,339	19,639
Other Hanford Contractors		1.00 ls		/ls			/ls		352,900.00 /ls	352,900	/ls		-	-	352,900	168,209	521,109
Crane & Rigging		1.00 ls		/ls			/ls		113,100.00 /ls	113,100	/ls		-	-	113,100	53,909	167,009

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS18030213 K West Basin Min Safe																	
Taxes & Licenses		1.00 ls		/ls			/ls		/ls		/ls		62,300.00 /ls	62,300	62,300	29,695	91,995
Contract Labor		1.00 ls		/ls			/ls		175,800.00 /ls	175,800	/ls		-	-	175,800	83,795	259,595
Freight		1.00 ls		/ls			/ls		14,100.00 /ls	14,100	/ls		-	-	14,100	6,721	20,821
Carpenter		0.13 ea	######## ch/ea	51.18 /ch	225	11,516	-	-	-	-	-	-	-	-	11,516	2,092	13,607
Electrician		1.00 ea	######## ch/ea	60.19 /ch	1,800	108,342	-	-	-	-	-	-	-	-	108,342	19,680	128,022
Millwrights		0.25 ea	######## ch/ea	57.58 /ch	450	25,911	-	-	-	-	-	-	-	-	25,911	4,707	30,618
Painters		0.13 ea	######## ch/ea	57.89 /ch	225	13,025	-	-	-	-	-	-	-	-	13,025	2,366	15,391
Plumber or Pipefitter		0.25 ea	######## ch/ea	55.36 /ch	450	24,912	-	-	-	-	-	-	-	-	24,912	4,525	29,437
Chemical Engineers- E010		0.25 ea	######## ch/ea	81.66 /ch	450	36,747	-	-	-	-	-	-	-	-	36,747	6,675	43,422
Civil Engineers		0.50 ea	######## ch/ea	92.33 /ch	900	83,097	-	-	-	-	-	-	-	-	83,097	15,094	98,191
Electrical Engineers		0.50 ea	######## ch/ea	79.21 /ch	900	71,289	-	-	-	-	-	-	-	-	71,289	12,949	84,238
Environmental Engineers		0.13 ea	######## ch/ea	82.98 /ch	225	18,671	-	-	-	-	-	-	-	-	18,671	3,391	22,062
Mechanical Engineers		0.06 ea	######## ch/ea	85.74 /ch	108	9,260	-	-	-	-	-	-	-	-	9,260	1,682	10,942
Nuclear Engineers		0.08 ea	######## ch/ea	94.95 /ch	144	13,673	-	-	-	-	-	-	-	-	13,673	2,484	16,156
Plant Engineers		2.25 ea	######## ch/ea	68.98 /ch	4,050	279,369	-	-	-	-	-	-	-	-	279,369	50,747	330,116
Quality Control Engineers		0.20 ea	######## ch/ea	75.25 /ch	360	27,090	-	-	-	-	-	-	-	-	27,090	4,921	32,011
Safety Engineer		1.10 ea	######## ch/ea	71.00 /ch	1,980	140,580	-	-	-	-	-	-	-	-	140,580	25,536	166,116
Other Engineers		1.30 ea	######## ch/ea	106.23 /ch	2,340	248,578	-	-	-	-	-	-	-	-	248,578	45,154	293,732
Construction Engineers		0.01 ea	######## ch/ea	100.10 /ch	18	1,802	-	-	-	-	-	-	-	-	1,802	327	2,129
Administrative Assistants		1.50 ea	######## ch/ea	47.45 /ch	2,700	128,115	-	-	-	-	-	-	-	-	128,115	23,272	151,387
Office Clerks (General)		1.00 ea	######## ch/ea	36.74 /ch	1,800	66,132	-	-	-	-	-	-	-	-	66,132	12,013	78,145
Secretaries		1.00 ea	######## ch/ea	36.30 /ch	1,800	65,340	-	-	-	-	-	-	-	-	65,340	11,869	77,209
First Line Supervisors		1.00 ea	######## ch/ea	78.54 /ch	1,800	141,372	-	-	-	-	-	-	-	-	141,372	25,680	167,052
Managers & Executives		2.90 ea	######## ch/ea	102.62 /ch	5,220	535,676	-	-	-	-	-	-	-	-	535,676	97,304	632,981
Planner/Scheduler/Estimators		0.75 ea	######## ch/ea	86.56 /ch	1,350	116,856	-	-	-	-	-	-	-	-	116,856	21,227	138,083
Health Physicists		0.80 ea	######## ch/ea	76.01 /ch	1,440	109,454	-	-	-	-	-	-	-	-	109,454	19,882	129,337
Industrial Hygienists		0.50 ea	######## ch/ea	72.95 /ch	900	65,655	-	-	-	-	-	-	-	-	65,655	11,926	77,581
Trainer		1.00 ea	######## ch/ea	75.63 /ch	1,800	136,134	-	-	-	-	-	-	-	-	136,134	24,728	160,862
Technical Writers & Editors		0.85 ea	######## ch/ea	66.18 /ch	1,530	101,255	-	-	-	-	-	-	-	-	101,255	18,393	119,648
Other Professionals		0.85 ea	######## ch/ea	89.60 /ch	1,530	137,088	-	-	-	-	-	-	-	-	137,088	24,902	161,990
Buyers/Procurement/Contracting		0.01 ea	######## ch/ea	70.24 /ch	18	1,264	-	-	-	-	-	-	-	-	1,264	230	1,494
Nuclear Waste Process Operator		9.15 ea	######## ch/ea	58.05 /ch	16,470	956,084	-	-	-	-	-	-	-	-	956,084	173,671	1,129,754
Environmental Scientists		0.50 ea	######## ch/ea	71.72 /ch	900	64,548	-	-	-	-	-	-	-	-	64,548	11,725	76,273
Technicians		0.50 ea	######## ch/ea	56.63 /ch	900	50,967	-	-	-	-	-	-	-	-	50,967	9,258	60,225
Drafters		0.25 ea	######## ch/ea	99.37 /ch	450	44,717	-	-	-	-	-	-	-	-	44,717	8,123	52,839
Health Physics Technicians		7.50 ea	######## ch/ea	53.43 /ch	13,500	721,305	-	-	-	-	-	-	-	-	721,305	131,024	852,329
Instrument & Control Tech		0.05 ea	######## ch/ea	60.48 /ch	90	5,443	-	-	-	-	-	-	-	-	5,443	989	6,432
Motor Carrier Services		1.00 ls		/ls			/ls		139.90 /ls	140			-	-	140	25	165
LS18030213 K West Basin Min Safe					68,823	4,561,267		2,931,000		669,340				62,300	8,223,907	2,817,566	11,041,472
FY13 Fiscal Year 2013					**68,823**	**4,561,267**		**2,931,000**		**669,340**				**62,300**	**8,223,907**	**2,817,566**	**11,041,472**
FY14 Fiscal Year 2014																	
LS18030114 Maintenance																	
Fuel, Oil, Grease, Tractor trailer maintenance		30.00 wk		/wk	1,200		50.00 /wk	1,500	/wk		100.00 /wk	3,000	-	-	4,500	2,616	7,116
LS18030114 Maintenance					1,200			1,500				3,000			4,500	2,616	7,116
LS18030214 K West Basin Min Safe																	
Material & Equipment		1.00 ls		/ls			2,931,000.00 /ls	2,931,000	/ls		0.00 /ls	0	-	-	2,931,000	1,703,784	4,634,784
PNL		1.00 ls		/ls			0.00 /ls	0	13,300.00 /ls	13,300	/ls		-	-	13,300	6,627	19,927
Other Hanford Contractors		1.00 ls		/ls			/ls		352,900.00 /ls	352,900	/ls		-	-	352,900	175,849	528,749
Crane & Rigging		1.00 ls		/ls			/ls		113,100.00 /ls	113,100	/ls		-	-	113,100	56,357	169,457
Taxes & Licenses		1.00 ls		/ls			/ls		/ls		/ls		62,300.00 /ls	62,300	62,300	31,044	93,344
Contract Labor		1.00 ls		/ls			/ls		175,800.00 /ls	175,800	/ls		-	-	175,800	87,601	283,401
Freight		1.00 ls		/ls			/ls		14,100.00 /ls	14,100	/ls		-	-	14,100	7,026	21,126
Carpenter		0.13 ea	######## ch/ea	51.18 /ch	225	11,516	-	-	-	-	-	-	-	-	11,516	2,341	13,857
Electrician		1.00 ea	######## ch/ea	60.19 /ch	1,800	108,342	-	-	-	-	-	-	-	-	108,342	22,026	130,368
Millwrights		0.25 ea	######## ch/ea	57.58 /ch	450	25,911	-	-	-	-	-	-	-	-	25,911	5,268	31,179
Painters		0.13 ea	######## ch/ea	57.89 /ch	225	13,025	-	-	-	-	-	-	-	-	13,025	2,648	15,673
Plumber or Pipefitter		0.25 ea	######## ch/ea	55.36 /ch	450	24,912	-	-	-	-	-	-	-	-	24,912	5,065	29,977
Chemical Engineers- E010		0.25 ea	######## ch/ea	81.66 /ch	450	36,747	-	-	-	-	-	-	-	-	36,747	7,471	44,218
Civil Engineers		0.50 ea	######## ch/ea	92.33 /ch	900	83,097	-	-	-	-	-	-	-	-	83,097	16,893	99,990
Electrical Engineers		0.50 ea	######## ch/ea	79.21 /ch	900	71,289	-	-	-	-	-	-	-	-	71,289	14,493	85,782
Environmental Engineers		0.13 ea	######## ch/ea	82.98 /ch	225	18,671	-	-	-	-	-	-	-	-	18,671	3,796	22,466
Mechanical Engineers		0.06 ea	######## ch/ea	85.74 /ch	108	9,260	-	-	-	-	-	-	-	-	9,260	1,883	11,142
Nuclear Engineers		0.08 ea	######## ch/ea	94.95 /ch	144	13,673	-	-	-	-	-	-	-	-	13,673	2,780	16,452
Plant Engineers		2.25 ea	######## ch/ea	68.98 /ch	4,050	279,369	-	-	-	-	-	-	-	-	279,369	56,795	336,164
Quality Control Engineers		0.20 ea	######## ch/ea	75.25 /ch	360	27,090	-	-	-	-	-	-	-	-	27,090	5,507	32,597
Safety Engineer		1.10 ea	######## ch/ea	71.00 /ch	1,980	140,580	-	-	-	-	-	-	-	-	140,580	28,580	169,160
Other Engineers		1.30 ea	######## ch/ea	106.23 /ch	2,340	248,578	-	-	-	-	-	-	-	-	248,578	50,535	299,114
Construction Engineers		0.01 ea	######## ch/ea	100.10 /ch	18	1,802	-	-	-	-	-	-	-	-	1,802	366	2,168
Administrative Assistants		1.50 ea	######## ch/ea	47.45 /ch	2,700	128,115	-	-	-	-	-	-	-	-	128,115	26,046	154,161
Office Clerks (General)		1.00 ea	######## ch/ea	36.74 /ch	1,800	66,132	-	-	-	-	-	-	-	-	66,132	13,445	79,577
Secretaries		1.00 ea	######## ch/ea	36.30 /ch	1,800	65,340	-	-	-	-	-	-	-	-	65,340	13,283	78,623
First Line Supervisors		1.00 ea	######## ch/ea	78.54 /ch	1,800	141,372	-	-	-	-	-	-	-	-	141,372	28,741	170,113
Managers & Executives		2.90 ea	######## ch/ea	102.62 /ch	5,220	535,676	-	-	-	-	-	-	-	-	535,676	108,902	644,578
Planner/Scheduler/Estimators		0.75 ea	######## ch/ea	86.56 /ch	1,350	116,856	-	-	-	-	-	-	-	-	116,856	23,757	140,613
Health Physicists		0.80 ea	######## ch/ea	76.01 /ch	1,440	109,454	-	-	-	-	-	-	-	-	109,454	22,252	131,706
Industrial Hygienists		0.50 ea	######## ch/ea	72.95 /ch	900	65,655	-	-	-	-	-	-	-	-	65,655	13,348	79,003
Trainer		1.00 ea	######## ch/ea	75.63 /ch	1,800	136,134	-	-	-	-	-	-	-	-	136,134	27,676	163,810
Technical Writers & Editors		0.85 ea	######## ch/ea	66.18 /ch	1,530	101,255	-	-	-	-	-	-	-	-	101,255	20,585	121,840
Other Professionals		0.85 ea	######## ch/ea	89.60 /ch	1,530	137,088	-	-	-	-	-	-	-	-	137,088	27,870	164,958
Buyers/Procurement/Contracting		0.01 ea	######## ch/ea	70.24 /ch	18	1,264	-	-	-	-	-	-	-	-	1,264	257	1,521
Nuclear Waste Process Operator		9.15 ea	######## ch/ea	58.05 /ch	16,470	956,084	-	-	-	-	-	-	-	-	956,084	194,370	1,150,453
Environmental Scientists		0.50 ea	######## ch/ea	71.72 /ch	900	64,548	-	-	-	-	-	-	-	-	64,548	13,122	77,670
Technicians		0.50 ea	######## ch/ea	56.63 /ch	900	50,967	-	-	-	-	-	-	-	-	50,967	10,361	61,328
Drafters		0.25 ea	######## ch/ea	99.37 /ch	450	44,717	-	-	-	-	-	-	-	-	44,717	9,091	53,807
Health Physics Technicians		7.50 ea	######## ch/ea	53.43 /ch	13,500	721,305	-	-	-	-	-	-	-	-	721,305	146,640	867,945
Instrument & Control Tech		0.05 ea	######## ch/ea	60.48 /ch	90	5,443	-	-	-	-	-	-	-	-	5,443	1,107	6,550

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS18030214 K West Basin Min Safe																	
Motor Carrier Services		1.00 ls		0.00 /ls		0	0.00 /ls	0	139.90 /ls	140	-	-	-	-	140	28	168
LS18030214 K West Basin Min Safe					68,823	4,561,267		2,931,000		669,340				62,300	8,223,907	2,995,613	11,219,520
FY14 Fiscal Year 2014					**70,023**	**4,561,267**		**2,932,500**		**669,340**		**3,000**		**62,300**	**8,228,407**	**2,998,229**	**11,226,636**
.18.03 Maintenance					**345,315**	**22,806,333**		**14,656,500**		**3,346,699**		**3,000**		**311,500**	**41,124,033**	**13,234,829**	**54,358,862**
.18 Operations and Maintenance					398,120	25,761,065		14,656,500		3,494,958		3,000		311,500	44,227,023	13,866,336	58,093,359
.19 Deactivation & Decommissioning																	
.19.01 Deactivation & Decommissioning																	
FY14 Fiscal Year 2014																	
LS19190114 D&D Planning																	
First Line Supervisors		***0.00 wk***	***34.600 ch/wk***	***78.54 /ch***		***0***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
Project & Program Managers		***0.00 wk***	***34.600 ch/wk***	***##### /ch***		***0***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
Planner/Scheduler/Estimators		***0.00 wk***	***34.600 ch/wk***	***86.56 /ch***		***0***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
.19.02 Demolition																	
FY15 Fiscal Year 2015																	
LS19020115 Field Staff																	
Project Manager		***0.00 wk***	***40.000 ch/wk***	***##### /ch***		***0***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
Project Project Engineer		***0.00 wk***	***40.000 mh/wk***	***91.36 /mh***		***0***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
Superintendent		***0.00 wk***	***40.000 mh/wk***	***96.30 /mh***		***0***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
Field Engineer		***0.00 wk***	***40.000 mh/wk***	***64.20 /mh***		***0***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
Health & Safety		***0.00 wk***	***40.000 mh/wk***	***83.95 /mh***		***0***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
Quality Assurance / Quality Control		***0.00 wk***	***40.000 mh/wk***	***83.95 /mh***		***0***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
Radiation Control Technician		***0.00 wk***	***40.000 mh/wk***	***64.20 /mh***		***0***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
Project Controls - Estimating, Scheduling		***0.00 wk***	***40.000 mh/wk***	***54.49 /mh***		***0***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
Time Keeper		***0.00 wk***	***40.000 mh/wk***	***39.73 /mh***		***0***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
Clerk		***0.00 wk***	***40.000 mh/wk***	***14.43 /mh***		***0***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
LS19020215 Field Office																	
Office Trailer, furnished, rent per month, 50' x 12', excl. hookups		***0.00 ea***		***-***		***-***	***375.00 /ea***	***0***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
Field Office Expense, office equipment rental, average		***0.00 mo***		***-***		***-***	***150.00 /mo***	***0***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
Field Office Expense, office supplies, average		***0.00 mo***		***-***		***-***	***95.00 /mo***	***0***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
Field Office Expense, telephone bill; avg. bill/month, incl. long dist.		***0.00 mo***		***-***		***-***	***210.00 /mo***	***0***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
Field Office Expense, field office lights & HVAC		***0.00 mo***		***-***		***-***	***110.00 /mo***	***0***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
LS19020315 Demolition																	
LLMW - Disposal @ Hanford ERDIFF	***1.296 tons per cy concrete ruble***	***0.00 ton***		***-***		***-***	***-***	***-***	***40.00 /ton***	***0***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
LLMW - Disposal @ Hanford ERDIFF	***gantry crane, track, & Misc. items***	***0.00 ton***		***-***		***-***	***-***	***-***	***40.00 /ton***	***0***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
Electrical Demolition	***Light poles, power panels, transformers, ect.***	***0.00 wk***	***40.000 ch/wk***	***##### /ch***		***0***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
Disassemble gantry crane		***0.00 wk***	***40.000 ch/wk***	***##### /ch***		***0***	***-***	***-***	***-***	***-***	***153.13 /ch***	***-***	***-***	***-***	***0***	***0***	***0***
Selective site demolition, hydodemolition, concrete pavement, 4000 PSI, 12" depth		***0.00 sf***	***0.087 ch/sf***	***##### /ch***		***0***	***-***	***-***	***-***	***-***	***135.63 /ch***	***0***	***-***	***-***	***0***	***0***	***0***
Demolish, remove pavement & curb, remove bituminous pavement, 4" to 6" thick, excludes hauling and disposal fees		***0.00 sy***	***0.042 ch/sy***	***##### /ch***		***0***	***-***	***-***	***-***	***-***	***125.28 /ch***	***0***	***-***	***-***	***0***	***0***	***0***
Fencing demolition, remove chain link posts & fabric, 8' to 10' high		***0.00 lf***	***0.039 ch/lf***	***##### /ch***		***0***	***-***	***-***	***-***	***-***	***35.68 /ch***	***0***	***-***	***-***	***0***	***0***	***0***
Footings and foundations demolition, remove concrete footing, 2' thick, 3' wide, excludes disposal costs and dump fees		***0.00 lf***	***0.166 ch/lf***	***##### /ch***		***0***	***-***	***-***	***-***	***-***	***135.63 /ch***	***0***	***-***	***-***	***0***	***0***	***0***
Footings and foundations demolition, add for disposal, up to 5 miles, excludes disposal costs and dump fees		***0.00 cy***	***0.079 ch/cy***	***##### /ch***		***0***	***-***	***-***	***-***	***-***	***229.45 /ch***	***0***	***-***	***-***	***0***	***0***	***0***
Selectv metals demoltn,strt framing members,5 - 10 tons,remove whole cut into smaller pieces,incl loading,excl shoring,bracing,cutting,hauling,dumping	***Selective metals demolition, structural framing members, 5 - 10 tons, remove whole or cut up into smaller pieces, incl loading, excl shoring, bracing, cutting, hauling, dumping***	***0.00 ea***	***0.728 ch/ea***	***##### /ch***		***0***	***-***	***-***	***-***	***-***	***153.13 /ch***	***0***	***-***	***-***	***0***	***0***	***0***
Excavating, bulk bank measure, 2-1/2 C.Y. capacity = 95 C.Y./hour, front end loader, track mounted	***Remove Rock base***	***0.00 bcy***	***0.023 ch/bcy***	***68.51 /ch***		***0***	***-***	***-***	***-***	***-***	***79.40 /ch***	***0***	***-***	***-***	***0***	***0***	***0***
.19.03 Site Restoration																	
FY15 Fiscal Year 2015																	
LS19030115 Field Staff																	
Project Manager		***0.00 wk***	***40.000 ch/wk***	***##### /ch***		***0***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
Project Project Engineer		***0.00 wk***	***40.000 mh/wk***	***91.36 /mh***		***0***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
Superintendent		***0.00 wk***	***40.000 mh/wk***	***96.30 /mh***		***0***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
Field Engineer		***0.00 wk***	***40.000 mh/wk***	***64.20 /mh***		***0***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
Health & Safety		***0.00 wk***	***40.000 mh/wk***	***83.95 /mh***		***0***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
Quality Assurance / Quality Control		***0.00 wk***	***40.000 mh/wk***	***83.95 /mh***		***0***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
Radiation Control Technician		***0.00 wk***	***40.000 mh/wk***	***64.20 /mh***		***0***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
Project Controls - Estimating, Scheduling		***0.00 wk***	***40.000 mh/wk***	***54.49 /mh***		***0***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
Time Keeper		***0.00 wk***	***40.000 mh/wk***	***39.73 /mh***		***0***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***
Clerk		***0.00 wk***	***40.000 mh/wk***	***14.43 /mh***		***0***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***-***	***0***	***0***	***0***

Spreadsheet Level	Notes	Takeoff Quantity	Labor Productivity	Labor Price	Labor Man Hrs	Labor Amount	Material Price	Material Amount	Sub Price	Sub Amount	Equip Price	Equip Amount	Other Price	Other Amount	Total Amount	Addon Amount	Grand Total
LS19030215 Field Office																	
Office Trailer, furnished, rent per month, 50' x 12', excl. hookups		*0.00 ea*		-		-	*375.00 /ea*	*0*	-	-	-	-	-	-	*0*	*0*	*0*
Field Office Expense, office equipment rental, average		*0.00 mo*		-		-	*150.00 /mo*	*0*	-	-	-	-	-	-	*0*	*0*	*0*
Field Office Expense, office supplies, average		*0.00 mo*		-		-	*95.00 /mo*	*0*	-	-	-	-	-	-	*0*	*0*	*0*
Field Office Expense, telephone bill; avg. bill/month, incl. long dist.		*0.00 mo*		-		-	*210.00 /mo*	*0*	-	-	-	-	-	-	*0*	*0*	*0*
Field Office Expense, field office lights & HVAC		*0.00 mo*		-		-	*110.00 /mo*	*0*	-	-	-	-	-	-	*0*	*0*	*0*
LS19030315 Site Restoration																	
Soil testing, soil density, nuclear method, ASTM D2922		*0.00 ea*		-		-	-	-	-	-	-	-	*35.00 /ea*	*0*	*0*	*0*	*0*
Soil testing, Proctor compaction, 6" modified mold		*0.00 ea*		-		-	-	-	-	-	-	-	*68.00 /ea*	*0*	*0*	*0*	*0*
Earthwork inspection technician, per day		*0.00 ea*		-		-	-	-	-	-	-	-	*210.00 /ea*	*0*	*0*	*0*	*0*
Fine grading, for roadway, base or leveling course, large area, 6,000 S.Y. or more		*0.00 sy*	*0.004 ch/sy*	*89.98 /ch*		*0*	-	-	-	-	*66.80 /ch*	*0*	-	-	*0*	*0*	*0*
Excavating, bulk bank measure, 5 C.Y. capacity = 185 C.Y./hour, wheel mounted		*0.00 bcy*	*0.005 ch/bcy*	*68.51 /ch*		*0*	-	-	-	-	*103.35 /ch*	*0*	-	-	*0*	*0*	*0*
Backfill, structural, sandy clay & loam, 80 H.P. dozer, 50' haul, excludes compaction		*0.00 lcy*	*0.007 ch/lcy*	*68.51 /ch*		*0*	-	-	-	-	*47.43 /ch*	*0*	-	-	*0*	*0*	*0*
Hauling, excavated or borrow material, loose cubic yards, 1/4 mile round trip, 3.7 loads/hour, 12 C.Y. dump truck, highway haulers, excludes loading		*0.00 lcy*	*0.028 ch/lcy*	*48.02 /ch*		*0*	-	-	-	-	*62.85 /ch*	*0*	-	-	*0*	*0*	*0*
Compaction, structural, common fill, 8" lifts, sheepsfoot or wobbly wheel roller		*0.00 ecy*	*0.006 ch/ecy*	*68.51 /ch*		*0*	-	-	-	-	*125.75 /ch*	*0*	-	-	*0*	*0*	*0*
Seeding, mechanical seeding hydro or air seeding for large areas, includes lime, fertilizer and seed		*0.00 sy*	*0.001 ch/sy*	*##### /ch*		*0*	*0.16 /sy*	*0*	-	-	*69.18 /ch*	*0*	-	-	*0*	*0*	*0*
H Hydraulic Loading System					716,745	51,397,668		18,601,780		3,792,746		1,410,048		6,578,337	81,780,579	21,741,273	103,521,851

Estimate Totals

Description	Amount	Totals	Hours	Rate	Cost Basis	Percent of Total
Labor	51,397,668		716,744.574 hrs			49.65%
Material	18,601,780					17.97%
Subcontract	3,792,746					3.66%
Equipment	1,410,048		3,325.422 hrs			1.36%
Other	6,578,337					6.35%
	81,780,579	81,780,579				79.00
Sales Tax	1,543,948			8.30000 %	C	1.49%
Sales Tax on Rental Equip	117,034			8.30000 %	C	0.11%
	1,660,982	83,441,561				1.60
Construction General Req.	205,718			18.00000 %	C	0.20%
	205,718	83,647,279				0.20
Subcontractor Liability Ins.	454,376			2.00000 %	C	0.44%
Subcontractor Bond	567,970			2.50000 %	C	0.55%
	1,022,346	84,669,625				0.99
Overhead / Fee / Profit	5,679,695			25.00000 %	C	5.49%
	5,679,695	90,349,320				5.49
FY2010 Escalation	277,692			2.00000 %	C	0.27%
FY2011 Escalation	620,859			4.04000 %	C	0.60%
FY2012 Escalation	1,073,159			6.12000 %	C	1.04%
FY2013 Escalation	1,950,416			8.24300 %	C	1.88%
FY2014 Escalation	1,136,311			10.40800 %	C	1.10%
	5,058,437	95,407,757				4.89
Site G&A on Markups	1,162,747			8.50000 %	O	1.12%
Site G&A on Direct Costs	6,951,349			8.50000 %	C	6.71%
	8,114,096	103,521,853				7.84
Risk - Zero					C	
Risk - Low					C	
Risk - Low - Medium					C	
Risk - Medium					C	
Risk - Medium - High					C	
Risk - High					C	
		103,521,853				
Total		***103,521,853***				

Timberline Prod Fac (K Basin) 8/1/2009

HanfordSC-Hy -Productivity Factor 2000 (5-8's).xls

PRC-STP-00042, Rev. 0

Timberline Productivity Factor **-80.8**

(negative %)

Crews work 8 hrs/day, 5 days/wk

Productivity Factor Evaluation

Project Location: K Basin

Productivity Adjustment % (D F + B F)	421.85%
Difficulty Factor (DF)	210.00%
Building Factor (BF)	211.85%
Work Factor Constraints	2.0735
x Additional Factors	1.5040 Equals Building Factor

Note to calculate an accurate productivity factor one must:

1 Have a thorough understanding of the basis of the database or work standards being used.

2 Have a working knowledge of the procedures the work crews will follow.

3 Be familiar with the work site where the work will be executed.

4 A different productivity factor may be require for each work area in one project.

Degree of Difficulty

Enter your percentage factor for each item in column M

		% Possible	Subtotal	Total 210.00%
I	Location			150.00%
	Labor Productivity difference from data base standard	-100 to +100	100.00%	
	Mask Mark up			
II	Height of Work			
	Work < 8 feet above floor level (a.f.l.)	0		
	Work between 8 feet and 16 feet (a.f.l.)	15-20	50.00%	
	Work higher than 16 feet (a.f.l.)	25-35		
	Work higher than 16 feet (a.f.l.)(Mech./Elec.)	20-125		
III	Accessibility/Obstructions			25.00%
	Good accessibility/No obstructions	0		
	Limited accessibility/Minor obstructions	10-15		
	Poor accessibility/Substantial obstructions	20-25	25.00%	
	Remote work			
IV	Quanity Installed			0.00%
	Standard quantity *	0		
	Less than standard quanity **	100-300		
	* Estimator must determine the standard quantity based on the estimating standards used.			
	** Adder increases proportonally as the quantity decreases from the standard.			
V	Quality Assurance			35.00%
	Non-vital Safety System (VSS)/Non-Safety Class Item	0		
	Vital Safety System/Safety Class Item	30-35	35.00%	
	Vital Safety System/Safety Class Item (Mech./Elec.)	87-92		

Work Factor Constraints Total 107.35%

PRC-STP-00042, Rev. 0

Timberline Prod Fac (K Basin) 8/1/2009

HanfordSC-Hy -Productivity Factor 2000 (5-8's).xls

			Possible	Subtotal	Total
I	Personal	DOD 5010.15.1-M	0		6.00%
	A	Basic(go to rest room, get drink of water, phone,etc.)	4		
	B	Slightly disagreeable conditions-poor heating.	3		
	C	Extremely disagreeable most of the time -hot objects, ordors, & fumes, or excessive temperatures and or humidity.	6	6.00%	
II	Fatigue	DOD 5010.15.1-M & Rad. Protection Mgt. July/Aug 94	0		38.00%
	A	Position: Class			
		Working in close, cramped positions	0-7	6.00%	
	B	Mental:			
		Routine work committed to habit	0		
		Full attention: copying, checking or calculating	2	2.00%	
		Concentrated attention, nonroutine	4		
		Deep concentration: inspection work requiring interpretation and discretion of unfamiliar nature	8		
	C	Lighting			
		Normal light at least 75' candle power	0		
		Looking through drybox windows	1		
		Less than 75' candle for normal work or 125' candle for close work	2	2.00%	
	D	Noise:			
		Normal <60 dec.	0		
		Constant noise such as machine shop > 60 dec.	1	1.00%	
		Average constant noise with loud, sharp, intermittent noise such as punch press, sheetmetal shop, etc.	2		
	E	Restrictive safety devices:			
		1 Safety glasses	0		
		2 Protective clothing			
		Greens	0		
		Yellows	1		
		Anti-C's	2	2.00%	
		Fully-encapsulating suits	3		
		Lead apron	3		
		3 Face shield	2		
		4 Heavy, tight fireproof coat and shield	1-5		
		5 Filter mask	5		
		6 Respirator			
		Half face	18		
		Full face	25	25.00%	
		Supplied air	31		
		7 Glove box	1-5		
III	Delay	DOD 5010.15.1-M	0		46.00%
	A	Isolated job. Little coordination with adjacent jobs	1		
	B	Fairly close coordination with adjacent job	2	1.00%	
	C	Work in close proximity of building operations	1-50	45.00%	
	D	Weather	1-80		
IV	Production Efficiency	Mean's & Richardsons's	0		8.35%

A	Average 10 Hour work days	50 hrs/wk	91.25% efficient	8.75	8.35%	
B	Average 11 Hour work days	55 hrs/wk	81.25% efficient	18.25		
C	Average 12 Hour work days	60 hrs/wk	76.25% efficient	23.75		
D	Deferred Break	Work 4hrs off 1 hr	80.00% efficient	25.00		
	"5-8's" Clothing changes, shower time, & travel inclusive					
V	Procedural Requirements	Construction Management		0		9.00%
A	Work Package sign offs			0		
	1 A Package		45min/day	9.3	9.00%	
	2 B Package		15-30min/day	3.13-6.25		
	3 C Package			0		
B	Hot-welding *		10min.	2.1	0.00%	
C	Confined space *		10min.	2.1		
	* Varies with job					

Additional Factors

				Total		50.40%
				Possible	Subtotal	Total
I	Personal Access Control	Time Study		0		0.00%
A	Security Check			0-1		
B	MAA Security Check .729 x4 =2.9min		2 trips-in/out	.6		
	.729 x 8 =5.8 min		4 trips-in/out	1.2		
II	Building Access Control	Construction Management		0		0.00%
A	No overnight material storage-multiple material deliveries			1		
B	No overnight material storage-multiple material deliveries			3.25		
III	Building Layout	Time Study & RI internal letter June 3,1987		0		5.10%
A	Distance from Locker Room to MAA Security Check					
	1.1366 x 4 =4.5 min.		2 trips-in/out	0.9		
	1.1366 x 8 =9 min.		4 trips-in/out	1.8		
B	Distance from MAA Security Check to Work Area					
	1.1366 x 4 =6 min.		2 trips-in/out	1.2		
	1.1366 x 8 =12 min.		4 trips-in/out	2.5		
C	Distance from Cafeteria to locker					
	1.35 x 4 =5.4min.		2 trips-in/out	1.1	1.10%	
	(for use with breaks)					
D	Inordinate circumstances					
	2.5 x 4 =10 min.		2 trips-in/out	2		
	2.5 x 8 =20 min.		4 trips-in/out	4	4.00%	
IV	Contamination			0		2.00%
A	Category's 1-4			0		
B	Category 5			1		
C	Category 6			2	2.00%	
V	Monitoring	Time Study& Prove Study August 15, 1989		0		8.90%
A	Self monitoring at combo***	1 min. each	0.8	0.8		
B	Monitor out for 2 Breaks *	7.9 min. each	1.6	3.2	3.20%	
C	Monitor out at lunch*	7.9 min. each	1.6	1.6	1.60%	
D	Monitor out at end of day*	7.9 min. each	1.6	1.6	1.60%	

E	Body Scanner***	3 min. each	0.6	2.5	2.50%	
	*Assume 2 step off pads, **assume 2 ea., ***assume 4 ea.					
VI	Procedural Requirements	Construction Management		0		15.00%
A	Pre-evolution Meetings					
1	One meeting per week	30min/wk/man		1.25		
2	One meeting per week	60min/wk/man		2.5	2.50%	
3	One meeting per day	30 min.	30min/dy/man	6.25		
4	One meeting per day	45 min.	45min/dy/man	9.38		
5	One meeting per day	60 min.	60min/dy/man	12.5	12.50%	
VII	Shower	RI internal letter June 3,1987		0		1.90%
A	N/A			0		
B	End of day	9 min.		1.9	1.90%	
C	Deferred Break	N/A	0	0		
D	Breaks,Lunch, End of day	9min x 4=	36 min	7.5		
VIII	Clothing change	RI internal letter June 3,1987		0		17.50%
	6 minutes allowable	Time Study	2.59 min.			
A	One change out	6 min x 2 =	6	1.25		
B	0 breaks, lunch & home	6 min x 2 =	12	2.5		
C	Yellows	10 min. x 2 =	20	4.2		
D	Anti-C's	15 min. x 2 =	30	6.3		
E	Fully-encapsulating suits	20 min x 2 =	40	8.3		
F	2 breaks,lunch,&home	6 min. x 4 =	24	5.0	5.00%	
G	Yellows	10 min. x 4 =	40	8.3		
H	Anti-C's	15 min. x 4 =	60	12.5	12.50%	
I	Fully-encapsulating suits	20 min. x 4 =	80	16.7		

Timberline Productivity Factor **-68.6**
(negative %)
Crews work 8 hrs/day, 5 days/wk

Productivity Factor Evaluation

Project Location: Cell work

Productivity Adjustment % (D F + B F)	218.21%
Difficulty Factor (DF)	160.00%
Building Factor (BF)	58.21%
Work Factor Constraints	1.5435
x Additional Factors	1.0250 Equals Building Factor

Note to calculate an accurate productivity factor one must:

1 Have a thorough understanding of the basis of the database or work standards being used.
2 Have a working knowledge of the procedures the work crews will follow.
3 Be familiar with the work site where the work will be executed.
4 A different productivity factor may be require for each work area in one project.

Degree of Difficulty

Enter your percentage factor for each item in column M

		% Possible	Subtotal	Total 160.00%
				100.00%
I	Location			
	Labor Productivity difference from data base standard	-100 to +100	100.00%	
	Mask Mark up			
II	Height of Work			
	Work < 8 feet above floor level (a.f.l.)	0		
	Work between 8 feet and 16 feet (a.f.l.)	15-20		
	Work higher than 16 feet (a.f.l.)	25-35		
	Work higher than 16 feet (a.f.l.)(Mech./Elec.)	20-125		
III	Accessibility/Obstructions			25.00%
	Good accessibility/No obstructions	0		
	Limited accessibility/Minor obstructions	10-15		
	Poor accessibility/Substantial obstructions	20-25	25.00%	
	Remote work			
IV	Quanity Installed			0.00%
	Standard quantity *	0		
	Less than standard quanity **	100-300		
	* Estimator must determine the standard quantity based on the estimating standards used.			
	** Adder increases proportonally as the quantity decreases from the standard.			
V	Quality Assurance			35.00%
	Non-vital Safety System (VSS)/Non-Safety Class Item	0		
	Vital Safety System/Safety Class Item	30-35	35.00%	
	Vital Safety System/Safety Class Item (Mech./Elec.)	87-92		

Work Factor Constraints Total 54.35%

			Possible	Subtotal	Total
I	Personal	DOD 5010.15.1-M	0		0.00%
	A	Basic(go to rest room, get drink of water, phone,etc.)	4		
	B	Slightly disagreeable conditions-poor heating.	3		
	C	Extremely disagreeable most of the time -hot objects, ordors, & fumes, or excessive temperatures and or humidity.	6		
II	Fatigue	DOD 5010.15.1-M & Rad. Protection Mgt. July/Aug 94	0		0.00%
	A	Position: Class			
		Working in close, cramped positions	0-7		
	B	Mental:			
		Routine work committed to habit	0		
		Full attention: copying, checking or calculating	2		
		Concentrated attention, nonroutine	4		
		Deep concentration: inspection work requiring interpretation and discretion of unfamiliar nature	8		
	C	Lighting			
		Normal light at least 75' candle power	0		
		Looking through drybox windows	1		
		Less than 75' candle for normal work or 125' candle for close work	2		
	D	Noise:			
		Normal <60 dec.	0		
		Constant noise such as machine shop > 60 dec.	1		
		Average constant noise with loud, sharp, intermittent noise such as punch press, sheetmetal shop, etc.	2		
	E	Restrictive safety devices:			
		1 Safety glasses	0		
		2 Protective clothing			
		Greens	0		
		Yellows	1		
		Anti-C's	2		
		Fully-encapsulating suits	3		
		Lead apron	3		
		3 Face shield	2		
		4 Heavy, tight fireproof coat and shield	1-5		
		5 Filter mask	5		
		6 Respirator			
		Half face	18		
		Full face	25		
		Supplied air	31		
		7 Glove box	1-5		
III	Delay	DOD 5010.15.1-M	0		46.00%
	A	Isolated job. Little coordination with adjacent jobs	1		
	B	Fairly close coordination with adjacent job	2	1.00%	
	C	Work in close proximity of building operations	1-50	45.00%	
	D	Weather	1-80		
IV	Production Efficiency	Mean's & Richardsons's	0		0.00%

A	Average 10 Hour work days	50 hrs/wk	91.25% efficient	8.75		
B	Average 11 Hour work days	55 hrs/wk	81.25% efficient	18.25		
C	Average 12 Hour work days	60 hrs/wk	76.25% efficient	23.75		
D	Deferred Break	Work 4hrs off 1 hr	80.00% efficient	25.00		
	"5-8's" Clothing changes, shower time, & travel inclusive					
V	Procedural Requirements	Construction Management		0		8.35%
A	Work Package sign offs			0		
	1 A Package		45min/day	9.3		
	2 B Package		15-30min/day	3.13-6.25	6.25%	
	3 C Package			0		
B	Hot-welding *		10min.	2.1	2.10%	
C	Confined space *		10min.	2.1		
	* Varies with job					

Additional Factors

				Possible	Total Subtotal	Total 2.50% Total
I	Personal Access Control	Time Study		0		0.00%
A	Security Check			0-1		
B	MAA Security Check .729 x4 =2.9min		2 trips-in/out	.6		
	.729 x 8 =5.8 min		4 trips-in/out	1.2		
II	Building Access Control	Construction Management		0		0.00%
A	No overnight material storage-multiple material deliveries			1		
B	No overnight material storage-multiple material deliveries			3.25		
III	Building Layout	Time Study & RI internal letter June 3,1987		0		0.00%
A	Distance from Locker Room to MAA Security Check					
	1.1366 x 4 =4.5 min.		2 trips-in/out	0.9		
	1.1366 x 8 =9 min.		4 trips-in/out	1.8		
B	Distance from MAA Security Check to Work Area					
	1.1366 x 4 =6 min.		2 trips-in/out	1.2		
	1.1366 x 8 =12 min.		4 trips-in/out	2.5		
C	Distance from Cafeteria to locker					
	1.35 x 4 =5.4min.		2 trips-in/out	1.1		
	(for use with breaks)					
D	Inordinate circumstances					
	2.5 x 4 =10 min.		2 trips-in/out	2		
	2.5 x 8 =20 min.		4 trips-in/out	4		
IV	Contamination			0		0.00%
A	Category's 1-4			0		
B	Category 5			1		
C	Category 6			2		
V	Monitoring	Time Study& Prove Study August 15, 1989		0		0.00%
A	Self monitoring at combo***	1 min. each	0.8	0.8		
B	Monitor out for 2 Breaks *	7.9 min. each	1.6	3.2		
C	Monitor out at lunch*	7.9 min. each	1.6	1.6		
D	Monitor out at end of day*	7.9 min. each	1.6	1.6		

E	Body Scanner***	3 min. each	0.6	2.5		
	*Assume 2 step off pads, **assume 2 ea., ***assume 4 ea.					
VI	Procedural Requirements	Construction Management		0		2.50%
A	Pre-evolution Meetings					
	1 One meeting per week		30min/wk/man	1.25		
	2 One meeting per week		60min/wk/man	2.5	2.50%	
	3 One meeting per day	30 min.	30min/dy/man	6.25		
	4 One meeting per day	45 min.	45min/dy/man	9.38		
	5 One meeting per day	60 min.	60min/dy/man	12.5		
VII	Shower	RI internal letter June 3,1987		0		0.00%
A	N/A			0		
B	End of day		9 min.	1.9		
C	Deferred Break		N/A	0		
D	Breaks,Lunch, End of day	9min x 4=	36 min	7.5		
VIII	Clothing change	RI internal letter June 3,1987		0		0.00%
	6 minutes allowable	Time Study 2.59 min.				
A	One change out		6 min x 2 =	6	1.25	
B	0 breaks, lunch & home		6 min x 2 =	12	2.5	
C	Yellows		10 min. x 2 =	20	4.2	
D	Anti-C's		15 min. x 2 =	30	6.3	
E	Fully-encapsulating suits		20 min x 2 =	40	8.3	
F	2 breaks,lunch,&home		6 min. x 4 =	24	5.0	
G	Yellows		10 min. x 4 =	40	8.3	
H	Anti-C's		15 min. x 4 =	60	12.5	
I	Fully-encapsulating suits		20 min. x 4 =	80	16.7	

Timberline Productivity Factor **-54.2**
(negative %)
Crews work 8 hrs/day, 5 days/wk

Productivity Factor Evaluation

Project Location: Site work

Productivity Adjustment % (D F + B F)	118.21%
Difficulty Factor (DF)	60.00%
Building Factor (BF)	58.21%
Work Factor Constraints	1.5435
x Additional Factors	1.0250 Equals Building Factor

Note to calculate an accurate productivity factor one must:

1 Have a thorough understanding of the basis of the database or work standards being used.
2 Have a working knowledge of the procedures the work crews will follow.
3 Be familiar with the work site where the work will be executed.
4 A different productivity factor may be require for each work area in one project.

Degree of Difficulty

Enter your percentage factor for each item in column M

		% Possible	Subtotal	Total 60.00%
I	Location			25.00%
	Labor Productivity difference from data base standard	-100 to +100	25.00%	
	Badging, Training			
II	Height of Work			
	Work < 8 feet above floor level (a.f.l.)	0		
	Work between 8 feet and 16 feet (a.f.l.)	15-20		
	Work higher than 16 feet (a.f.l.)	25-35		
	Work higher than 16 feet (a.f.l.)(Mech./Elec.)	20-125		
III	Accessibility/Obstructions			0.00%
	Good accessibility/No obstructions	0		
	Limited accessibility/Minor obstructions	10-15		
	Poor accessibility/Substantial obstructions	20-25		
IV	Quanity Installed			0.00%
	Standard quantity *	0		
	Less than standard quanity **	100-300		
	* Estimator must determine the standard quantity based on the estimating standards used.			
	** Adder increases proportonally as the quantity decreases from the standard.			
V	Quality Assurance			35.00%
	Non-vital Safety System (VSS)/Non-Safety Class Item	0		
	Vital Safety System/Safety Class Item	30-35	35.00%	
	Vital Safety System/Safety Class Item (Mech./Elec.)	87-92		

Work Factor Constraints Total 54.35%

			Possible	Subtotal	Total
I	Personal	DOD 5010.15.1-M	0		0.00%
	A	Basic(go to rest room, get drink of water, phone,etc.)	4		
	B	Slightly disagreeable conditions-poor heating.	3		
	C	Extremely disagreeable most of the time -hot objects, ordors, & fumes, or excessive temperatures and or humidity.	6		
II	Fatigue	DOD 5010.15.1-M & Rad. Protection Mgt. July/Aug 94	0		0.00%
	A	Position: Class			
		Working in close, cramped positions	0-7		
	B	Mental:			
		Routine work committed to habit	0		
		Full attention: copying, checking or calculating	2		
		Concentrated attention, nonroutine	4		
		Deep concentration: inspection work requiring interpretation and discretion of unfamiliar nature	8		
	C	Lighting			
		Normal light at least 75' candle power	0		
		Looking through drybox windows	1		
		Less than 75' candle for normal work or 125' candle for close work	2		
	D	Noise:			
		Normal <60 dec.	0		
		Constant noise such as machine shop > 60 dec.	1		
		Average constant noise with loud, sharp, intermittent noise such as punch press, sheetmetal shop, etc.	2		
	E	Restrictive safety devices:			
		1 Safety glasses	0		
		2 Protective clothing			
		Greens	0		
		Yellows	1		
		Anti-C's	2		
		Fully-encapsulating suits	3		
		Lead apron	3		
		3 Face shield	2		
		4 Heavy, tight fireproof coat and shield	1-5		
		5 Filter mask	5		
		6 Respirator			
		Half face	18		
		Full face	25		
		Supplied air	31		
		7 Glove box	1-5		
III	Delay	DOD 5010.15.1-M	0		46.00%
	A	Isolated job. Little coordination with adjacent jobs	1		
	B	Fairly close coordination with adjacent job	2	1.00%	
	C	Work in close proximity of building operations	1-50	25.00%	
	D	Weather	1-80	20.00%	
IV	Production Efficiency	Mean's & Richardsons's	0		0.00%

A	Average 10 Hour work days	50 hrs/wk	91.25% efficient	8.75		
B	Average 11 Hour work days	55 hrs/wk	81.25% efficient	18.25		
C	Average 12 Hour work days	60 hrs/wk	76.25% efficient	23.75		
D	Deferred Break	Work 4hrs off 1 hr	80.00% efficient	25.00		
	"5-8's" Clothing changes, shower time, & travel inclusive					
V	Procedural Requirements	Construction Management		0		8.35%
A	Work Package sign offs			0		
	1 A Package		45min/day	9.3		
	2 B Package		15-30min/day	3.13-6.25	6.25%	
	3 C Package			0		
B	Hot-welding *		10min.	2.1	2.10%	
C	Confined space *		10min.	2.1		
	* Varies with job					

Additional Factors

				Possible	Total Subtotal	Total 2.50% Total
I	Personal Access Control	Time Study		0		0.00%
A	Security Check			0-1		
B	MAA Security Check .729 x4 =2.9min		2 trips-in/out	.6		
	.729 x 8 =5.8 min		4 trips-in/out	1.2		
II	Building Access Control	Construction Management		0		0.00%
A	No overnight material storage-multiple material deliveries			1		
B	No overnight material storage-multiple material deliveries			3.25		
III	Building Layout	Time Study & RI internal letter June 3,1987		0		0.00%
A	Distance from Locker Room to MAA Security Check					
	1.1366 x 4 =4.5 min.		2 trips-in/out	0.9		
	1.1366 x 8 =9 min.		4 trips-in/out	1.8		
B	Distance from MAA Security Check to Work Area					
	1.1366 x 4 =6 min.		2 trips-in/out	1.2		
	1.1366 x 8 =12 min.		4 trips-in/out	2.5		
C	Distance from Cafeteria to locker					
	1.35 x 4 =5.4min.		2 trips-in/out	1.1		
	(for use with breaks)					
D	Inordinate circumstances					
	2.5 x 4 =10 min.		2 trips-in/out	2		
	2.5 x 8 =20 min.		4 trips-in/out	4		
IV	Contamination			0		0.00%
A	Category's 1-4			0		
B	Category 5			1		
C	Category 6			2		
V	Monitoring	Time Study& Prove Study August 15, 1989		0		0.00%
A	Self monitoring at combo***	1 min. each	0.8	0.8		
B	Monitor out for 2 Breaks *	7.9 min. each	1.6	3.2		
C	Monitor out at lunch*	7.9 min. each	1.6	1.6		
D	Monitor out at end of day*	7.9 min. each	1.6	1.6		

E	Body Scanner***	3 min. each		0.6	2.5	
	*Assume 2 step off pads, **assume 2 ea., ***assume 4 ea.					
VI	Procedural Requirements	Construction Management			0	2.50%
A	Pre-evolution Meetings					
	1 One meeting per week		30min/wk/man		1.25	
	2 One meeting per week		60min/wk/man		2.5	2.50%
	3 One meeting per day	30 min.	30min/dy/man		6.25	
	4 One meeting per day	45 min.	45min/dy/man		9.38	
	5 One meeting per day	60 min.	60min/dy/man		12.5	
VII	Shower	RI internal letter June 3,1987			0	0.00%
A	N/A				0	
B	End of day		9 min.		1.9	
C	Deferred Break		N/A	0	0	
D	Breaks,Lunch, End of day	9min x 4=	36 min		7.5	
VIII	Clothing change	RI internal letter June 3,1987			0	0.00%
	6 minutes allowable	Time Study 2.59 min.				
A	One change out		6 min x 2 =	6	1.25	
B	0 breaks, lunch & home		6 min x 2 =	12	2.5	
C	Yellows		10 min. x 2 =	20	4.2	
D	Anti-C's		15 min. x 2 =	30	6.3	
E	Fully-encapsulating suits		20 min x 2 =	40	8.3	
F	2 breaks,lunch,&home		6 min. x 4 =	24	5.0	
G	Yellows		10 min. x 4 =	40	8.3	
H	Anti-C's		15 min. x 4 =	60	12.5	
I	Fully-encapsulating suits		20 min. x 4 =	80	16.7	

aace International

AACE International Recommended Practice No. 18R-97

COST ESTIMATE CLASSIFICATION SYSTEM – AS APPLIED IN ENGINEERING, PROCUREMENT, AND CONSTRUCTION FOR THE PROCESS INDUSTRIES

Acknowledgment:
Peter Christensen CCE, Primary Author
Larry R. Dysert CCC, Primary Author
Jennifer Bates CCE
Dorothy J. Burton
Robert C. Creese PE CCE
John K. Hollmann PE CCE
Kenneth K. Humphreys PE CCE
Donald F. McDonald JR. PE CCE
C. Arthur Miller
Bernard A. Pietlock CCC
Wesley R. Querns CCE
Don L. Short II

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Cost Estimate Classification System – As Applied in Engineering, Procurement, and Construction for the Process Industries

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PURPOSE

As a recommended practice of AACE International, the Cost Estimate Classification System provides guidelines for applying the general principles of estimate classification to project cost estimates (i.e., cost estimates that are used to evaluate, approve, and/or fund projects). The Cost Estimate Classification System maps the phases and stages of project cost estimating together with a generic maturity and quality matrix, which can be applied across a wide variety of industries.

This addendum to the generic recommended practice provides guidelines for applying the principles of estimate classification specifically to project estimates for engineering, procurement, and construction (EPC) work for the process industries. This addendum supplements the generic recommended practice (17R-97) by providing:

- a section that further defines classification concepts as they apply to the process industries;
- charts that compare existing estimate classification practices in the process industry; and
- a chart that maps the extent and maturity of estimate input information (project definition deliverables) against the class of estimate.

As with the generic standard, an intent of this addendum is to improve communications among all of the stakeholders involved with preparing, evaluating, and using project cost estimates specifically for the process industries.

It is understood that each enterprise may have its own project and estimating processes and terminology, and may classify estimates in particular ways. This guideline provides a generic and generally acceptable classification system for process industries that can be used as a basis to compare against. It is hoped that this addendum will allow each user to better assess, define, and communicate their own processes and standards in the light of generally-accepted cost engineering practice.

INTRODUCTION

For the purposes of this addendum, the term process industries is assumed to include firms involved with the manufacturing and production of chemicals, petrochemicals, and hydrocarbon processing. The common thread among these industries (for the purpose of estimate classification) is their reliance on process flow diagrams (PFDs) and piping and instrument diagrams (P&IDs) as primary scope defining documents. These documents are key deliverables in determining the level of project definition, and thus the extent and maturity of estimate input information.

Estimates for process facilities center on mechanical and chemical process equipment, and they have significant amounts of piping, instrumentation, and process controls involved. As such, this addendum may apply to portions of other industries, such as pharmaceutical, utility, metallurgical, converting, and similar industries. Specific addendums addressing these industries may be developed over time.

This addendum specifically does not address cost estimate classification in nonprocess industries such as commercial building construction, environmental remediation, transportation infrastructure, "dry" processes such as assembly and manufacturing, "soft asset" production such as software development, and similar industries. It also does not specifically address estimates for the exploration, production, or transportation of mining or hydrocarbon materials, although it may apply to some of the intermediate processing steps in these systems.

The cost estimates covered by this addendum are for engineering, procurement, and construction (EPC) work only. It does not cover estimates for the products manufactured by the process facilities, or for research and development work in support of the process industries. This guideline does not cover the significant building construction that may be a part of process plants. Building construction will be covered in a separate addendum.

This guideline reflects generally-accepted cost engineering practices. This addendum was based upon the practices of a wide range of companies in the process industries from around the world, as well as published references and standards. Company and public standards were solicited and reviewed by the AACE International Cost Estimating Committee. The practices were found to have significant commonalities that are conveyed in this addendum.

COST ESTIMATE CLASSIFICATION MATRIX FOR THE PROCESS INDUSTRIES

The five estimate classes are presented in figure 1 in relationship to the identified characteristics. Only the level of project definition determines the estimate class. The other four characteristics are secondary characteristics that are generally correlated with the level of project definition, as discussed in the generic standard. The characteristics are typical for the process industries but may vary from application to application.

This matrix and guideline provide an estimate classification system that is specific to the process industries. Refer to the generic standard for a general matrix that is non-industry specific, or to other addendums for guidelines that will provide more detailed information for application in other specific industries. These will typically provide additional information, such as input deliverable checklists to allow meaningful categorization in those particular industries.

	Primary Characteristic	***Secondary Characteristic***			
ESTIMATE CLASS	**LEVEL OF PROJECT DEFINITION** Expressed as % of complete definition	**END USAGE** Typical purpose of estimate	**METHODOLOGY** Typical estimating method	**EXPECTED ACCURACY RANGE** Typical variation in low and high ranges [a]	**PREPARATION EFFORT** Typical degree of effort relative to least cost index of 1 [b]
Class 5	0% to 2%	Concept Screening	Capacity Factored, Parametric Models, Judgment, or Analogy	L: -20% to -50% H: +30% to +100%	1
Class 4	1% to 15%	Study or Feasibility	Equipment Factored or Parametric Models	L: -15% to -30% H: +20% to +50%	2 to 4
Class 3	10% to 40%	Budget, Authorization, or Control	Semi-Detailed Unit Costs with Assembly Level Line Items	L: -10% to -20% H: +10% to +30%	3 to 10
Class 2	30% to 70%	Control or Bid/ Tender	Detailed Unit Cost with Forced Detailed Take-Off	L: -5% to -15% H: +5% to +20%	4 to 20
Class 1	50% to 100%	Check Estimate or Bid/Tender	Detailed Unit Cost with Detailed Take-Off	L: -3% to -10% H: +3% to +15%	5 to 100

Notes: [a] The state of process technology and availability of applicable reference cost data affect the range markedly. The +/- value represents typical percentage variation of actual costs from the cost estimate after application of contingency (typically at a 50% level of confidence) for given scope.

[b] If the range index value of "1" represents 0.005% of project costs, then an index value of 100 represents 0.5%. Estimate preparation effort is highly dependent upon the size of the project and the quality of estimating data and tools.

Figure 1. – Cost Estimate Classification Matrix for Process Industries

CHARACTERISTICS OF THE ESTIMATE CLASSES

The following charts (figures 2a through 2e) provide detailed descriptions of the five estimate classifications as applied in the process industries. They are presented in the order of least-defined estimates to the most-defined estimates. These descriptions include brief discussions of each of the estimate characteristics that define an estimate class.

For each chart, the following information is provided:

- **Description:** a short description of the class of estimate, including a brief listing of the expected estimate inputs based on the level of project definition.
- **Level of Project Definition Required:** expressed as a percent of full definition. For the process industries, this correlates with the percent of engineering and design complete.
- **End Usage:** a short discussion of the possible end usage of this class of estimate.
- **Estimating Methods Used:** a listing of the possible estimating methods that may be employed to develop an estimate of this class.
- **Expected Accuracy Range:** typical variation in low and high ranges after the application of contingency (determined at a 50% level of confidence). Typically, this results in a 90% confidence that the actual cost will fall within the bounds of the low and high ranges.
- **Effort to Prepare:** this section provides a typical level of effort (in hours) to produce a complete estimate for a US$20,000,000 plant. Estimate preparation effort is highly dependent on project size, project complexity, estimator skills and knowledge, and on the availability of appropriate estimating cost data and tools.
- **ANSI Standard Reference (1989) Name:** this is a reference to the equivalent estimate class in the existing ANSI standards.
- **Alternate Estimate Names, Terms, Expressions, Synonyms:** this section provides other commonly used names that an estimate of this class might be known by. These alternate names are not endorsed by this Recommended Practice. The user is cautioned that an alternative name may not always be correlated with the class of estimate as identified in the chart.

CLASS 5 ESTIMATE	
Description: Class 5 estimates are generally prepared based on very limited information, and subsequently have wide accuracy ranges. As such, some companies and organizations have elected to determine that due to the inherent inaccuracies, such estimates cannot be classified in a conventional and systemic manner. Class 5 estimates, due to the requirements of end use, may be prepared within a very limited amount of time and with little effort expended—sometimes requiring less than an hour to prepare. Often, little more than proposed plant type, location, and capacity are known at the time of estimate preparation. **Level of Project Definition Required:** 0% to 2% of full project definition. **End Usage:** Class 5 estimates are prepared for any number of strategic business planning purposes, such as but not limited to market studies, assessment of initial viability, evaluation of alternate schemes, project screening, project location studies, evaluation of resource needs and budgeting, long-range capital planning, etc.	**Estimating Methods Used:** Class 5 estimates virtually always use stochastic estimating methods such as cost/capacity curves and factors, scale of operations factors, Lang factors, Hand factors, Chilton factors, Peters-Timmerhaus factors, Guthrie factors, and other parametric and modeling techniques. **Expected Accuracy Range:** Typical accuracy ranges for Class 5 estimates are - 20% to -50% on the low side, and +30% to +100% on the high side, depending on the technological complexity of the project, appropriate reference information, and the inclusion of an appropriate contingency determination. Ranges could exceed those shown in unusual circumstances. **Effort to Prepare (for US$20MM project):** As little as 1 hour or less to perhaps more than 200 hours, depending on the project and the estimating methodology used. **ANSI Standard Reference Z94.2-1989 Name:** Order of magnitude estimate (typically -30% to +50%). **Alternate Estimate Names, Terms, Expressions, Synonyms:** Ratio, ballpark, blue sky, seat-of-pants, ROM, idea study, prospect estimate, concession license estimate, guesstimate, rule-of-thumb.

Figure 2a. – Class 5 Estimate

CLASS 4 ESTIMATE	
Description: Class 4 estimates are generally prepared based on limited information and subsequently have fairly wide accuracy ranges. They are typically used for project screening, determination of feasibility, concept evaluation, and preliminary budget approval. Typically, engineering is from 1% to 15% complete, and would comprise at a minimum the following: plant capacity, block schematics, indicated layout, process flow diagrams (PFDs) for main process systems, and preliminary engineered process and utility equipment lists. **Level of Project Definition Required:** 1% to 15% of full project definition. **End Usage:** Class 4 estimates are prepared for a number of purposes, such as but not limited to, detailed strategic planning, business development, project screening at more developed stages, alternative scheme analysis, confirmation of economic and/or technical feasibility, and preliminary budget approval or approval to proceed to next stage.	**Estimating Methods Used:** Class 4 estimates virtually always use stochastic estimating methods such as equipment factors, Lang factors, Hand factors, Chilton factors, Peters-Timmerhaus factors, Guthrie factors, the Miller method, gross unit costs/ratios, and other parametric and modeling techniques. **Expected Accuracy Range:** Typical accuracy ranges for Class 4 estimates are -15% to -30% on the low side, and +20% to +50% on the high side, depending on the technological complexity of the project, appropriate reference information, and the inclusion of an appropriate contingency determination. Ranges could exceed those shown in unusual circumstances. **Effort to Prepare (for US$20MM project):** Typically, as little as 20 hours or less to perhaps more than 300 hours, depending on the project and the estimating methodology used. **ANSI Standard Reference Z94.2-1989 Name:** Budget estimate (typically -15% to + 30%). **Alternate Estimate Names, Terms, Expressions, Synonyms:** Screening, top-down, feasibility, authorization, factored, pre-design, pre-study.

Figure 2b. – Class 4 Estimate

CLASS 3 ESTIMATE	
Description: Class 3 estimates are generally prepared to form the basis for budget authorization, appropriation, and/or funding. As such, they typically form the initial control estimate against which all actual costs and resources will be monitored. Typically, engineering is from 10% to 40% complete, and would comprise at a minimum the following: process flow diagrams, utility flow diagrams, preliminary piping and instrument diagrams, plot plan, developed layout drawings, and essentially complete engineered process and utility equipment lists. **Level of Project Definition Required:** 10% to 40% of full project definition. **End Usage:** Class 3 estimates are typically prepared to support full project funding requests, and become the first of the project phase "control estimates" against which all actual costs and resources will be monitored for variations to the budget. They are used as the project budget until replaced by more detailed estimates. In many owner organizations, a Class 3 estimate may be the last estimate required and could well form the only basis for cost/schedule control.	**Estimating Methods Used:** Class 3 estimates usually involve more deterministic estimating methods than stochastic methods. They usually involve a high degree of unit cost line items, although these may be at an assembly level of detail rather than individual components. Factoring and other stochastic methods may be used to estimate less-significant areas of the project. **Expected Accuracy Range:** Typical accuracy ranges for Class 3 estimates are -10% to -20% on the low side, and +10% to +30% on the high side, depending on the technological complexity of the project, appropriate reference information, and the inclusion of an appropriate contingency determination. Ranges could exceed those shown in unusual circumstances. **Effort to Prepare (for US$20MM project):** Typically, as little as 150 hours or less to perhaps more than 1,500 hours, depending on the project and the estimating methodology used. **ANSI Standard Reference Z94.2-1989 Name:** Budget estimate (typically -15% to + 30%). **Alternate Estimate Names, Terms, Expressions, Synonyms:** Budget, scope, sanction, semi-detailed, authorization, preliminary control, concept study, development, basic engineering phase estimate, target estimate.

Figure 2c. – Class 3 Estimate

CLASS 2 ESTIMATE	
Description: Class 2 estimates are generally prepared to form a detailed control baseline against which all project work is monitored in terms of cost and progress control. For contractors, this class of estimate is often used as the "bid" estimate to establish contract value. Typically, engineering is from 30% to 70% complete, and would comprise at a minimum the following: process flow diagrams, utility flow diagrams, piping and instrument diagrams, heat and material balances, final plot plan, final layout drawings, complete engineered process and utility equipment lists, single line diagrams for electrical, electrical equipment and motor schedules, vendor quotations, detailed project execution plans, resourcing and work force plans, etc. **Level of Project Definition Required:** 30% to 70% of full project definition. **End Usage:** Class 2 estimates are typically prepared as the detailed control baseline against which all actual costs and resources will now be monitored for variations to the budget, and form a part of the change/variation control program.	**Estimating Methods Used:** Class 2 estimates always involve a high degree of deterministic estimating methods. Class 2 estimates are prepared in great detail, and often involve tens of thousands of unit cost line items. For those areas of the project still undefined, an assumed level of detail takeoff (forced detail) may be developed to use as line items in the estimate instead of relying on factoring methods. **Expected Accuracy Range:** Typical accuracy ranges for Class 2 estimates are -5% to -15% on the low side, and +5% to +20% on the high side, depending on the technological complexity of the project, appropriate reference information, and the inclusion of an appropriate contingency determination. Ranges could exceed those shown in unusual circumstances. **Effort to Prepare (for US$20MM project):** Typically, as little as 300 hours or less to perhaps more than 3,000 hours, depending on the project and the estimating methodology used. Bid estimates typically require more effort than estimates used for funding or control purposes. **ANSI Standard Reference Z94.2-1989 Name:** Definitive estimate (typically -5% to + 15%). **Alternate Estimate Names, Terms, Expressions, Synonyms:** Detailed control, forced detail, execution phase, master control, engineering, bid, tender, change order estimate.

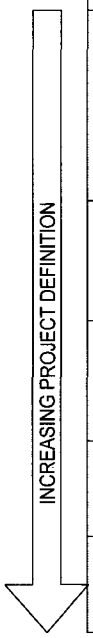
Figure 2d. – Class 2 Estimate

CLASS 1 ESTIMATE	
Description: Class 1 estimates are generally prepared for discrete parts or sections of the total project rather than generating this level of detail for the entire project. The parts of the project estimated at this level of detail will typically be used by subcontractors for bids, or by owners for check estimates. The updated estimate is often referred to as the current control estimate and becomes the new baseline for cost/schedule control of the project. Class 1 estimates may be prepared for parts of the project to comprise a fair price estimate or bid check estimate to compare against a contractor's bid estimate, or to evaluate/dispute claims. Typically, engineering is from 50% to 100% complete, and would comprise virtually all engineering and design documentation of the project, and complete project execution and commissioning plans. **Level of Project Definition Required:** 50% to 100% of full project definition. **End Usage:** Class 1 estimates are typically prepared to form a current control estimate to be used as the final control baseline against which all actual costs and resources will now be monitored for variations to the budget, and form a part of the change/variation control program. They may be used to evaluate bid checking, to support vendor/contractor negotiations, or for claim evaluations and dispute resolution.	**Estimating Methods Used:** Class 1 estimates involve the highest degree of deterministic estimating methods, and require a great amount of effort. Class 1 estimates are prepared in great detail, and thus are usually performed on only the most important or critical areas of the project. All items in the estimate are usually unit cost line items based on actual design quantities. **Expected Accuracy Range:** Typical accuracy ranges for Class 1 estimates are -3% to -10% on the low side, and +3% to +15% on the high side, depending on the technological complexity of the project, appropriate reference information, and the inclusion of an appropriate contingency determination. Ranges could exceed those shown in unusual circumstances. **Effort to Prepare (for US$20MM project):** Class 1 estimates require the most effort to create, and as such are generally developed for only selected areas of the project, or for bidding purposes. A complete Class 1 estimate may involve as little as 600 hours or less, to perhaps more than 6,000 hours, depending on the project and the estimating methodology used. Bid estimates typically require more effort than estimates used for funding or control purposes. **ANSI Standard Reference Z94.2 Name:** Definitive estimate (typically -5% to + 15%). **Alternate Estimate Names, Terms, Expressions, Synonyms:** Full detail, release, fall-out, tender, firm price, bottoms-up, final, detailed control, forced detail, execution phase, master control, fair price, definitive, change order estimate.

Figure 2e. – Class 1 Estimate

COMPARISON OF CLASSIFICATION PRACTICES

Figures 3a through 3c provide a comparison of the estimate classification practices of various firms, organizations, and published sources against one another and against the guideline classifications. These tables permits users to benchmark their own classification practices.



AACE Classification Standard	ANSI Standard Z94.0	AACE Pre-1972	Association of Cost Engineers (UK) ACostE	Norwegian Project Management Association (NFP)	American Society of Professional Estimators (ASPE)
Class 5	Order of Magnitude Estimate -30/+50	Order of Magnitude Estimate	Order of Magnitude Estimate Class IV -30/+30	Concession Estimate Exploration Estimate Feasibility Estimate	Level 1
Class 4	Budget Estimate -15/+30	Study Estimate	Study Estimate Class III -20/+20	Authorization Estimate	Level 2
Class 3		Preliminary Estimate	Budget Estimate Class II -10/+10	Master Control Estimate	Level 3
Class 2	Definitive Estimate -5/+15	Definitive Estimate	Definitive Estimate Class I -5/+5	Current Control Estimate	Level 4
Class 1		Detailed Estimate			Level 5 Level 6

Figure 3a. – Comparison of Classification Practices

AACE Classification Standard	Major Consumer Products Company (Confidential)	Major Oil Company (Confidential)	Major Oil Company (Confidential)	Major Oil Company (Confidential)
Class 5	Class S Strategic Estimate	Class V Order of Magnitude Estimate	Class A Prospect Estimate	Class V
			Class B Evaluation Estimate	
Class 4	Class 1 Conceptual Estimate	Class IV Screening Estimate	Class C Feasibility Estimate	Class IV
			Class D Development Estimate	
Class 3	Class 2 Semi-Detailed Estimate	Class III Primary Control Estimate	Class E Preliminary Estimate	Class III
Class 2	Class 3 Detailed Estimate	Class II Master Control Estimate	Class F Master Control Estimate	Class II
Class 1		Class I Current Control Estimate	Current Control Estimate	Class I

INCREASING PROJECT DEFINITION

Figure 3b. – Comparison of Classification Practices

AACE Classification Standard	J.R. Heizelman, 1988 AACE Transactions [1]	K.T. Yeo, The Cost Engineer, 1989 [2]	Stevens & Davis, 1988 AACE Transactions [3]	P. Behrenbruck, Journal of Petroleum Technology, 1993 [4]
Class 5	Class V	Class V Order of Magnitude	Class III*	Order of Magnitude
Class 4	Class IV	Class IV Factor Estimate	Class II	Study Estimate
Class 3	Class III	Class III Office Estimate		Budget Estimate
Class 2	Class II	Class II Definitive Estimate		
Class 1	Class I	Class I Final Estimate	Class I	Control Estimate

INCREASING PROJECT DEFINITION

[1] John R. Heizelman, ARCO Oil & Gas Co., 1988 AACE Transactions, Paper V3.7
[2] K.T. Yeo, The Cost Engineer, Vol. 27, No. 6, 1989
[3] Stevens & Davis, BP International Ltd., 1988 AACE Transactions, Paper B4.1 (* Class III is inferred)
[4] Peter Behrenbruck, BHP Petroleum Pty., Ltd., article in Petroleum Technology, August 1993

Figure 3c. – Comparison of Classification Practices

ESTIMATE INPUT CHECKLIST AND MATURITY MATRIX

Figure 4 maps the extent and maturity of estimate input information (deliverables) against the five estimate classification levels. This is a checklist of basic deliverables found in common practice in the process industries. The maturity level is an approximation of the degree of completion of the deliverable. The degree of completion is indicated by the following letters.

- None (blank): development of the deliverable has not begun.
- Started (S): work on the deliverable has begun. Development is typically limited to sketches, rough outlines, or similar levels of early completion.
- Preliminary (P): work on the deliverable is advanced. Interim, cross-functional reviews have usually been conducted. Development may be near completion except for final reviews and approvals.
- Complete (C): the deliverable has been reviewed and approved as appropriate.

	ESTIMATE CLASSIFICATION				
General Project Data:	**CLASS 5**	**CLASS 4**	**CLASS 3**	**CLASS 2**	**CLASS 1**
Project Scope Description	General	Preliminary	Defined	Defined	Defined
Plant Production/Facility Capacity	Assumed	Preliminary	Defined	Defined	Defined
Plant Location	General	Approximate	Specific	Specific	Specific
Soils & Hydrology	None	Preliminary	Defined	Defined	Defined
Integrated Project Plan	None	Preliminary	Defined	Defined	Defined
Project Master Schedule	None	Preliminary	Defined	Defined	Defined
Escalation Strategy	None	Preliminary	Defined	Defined	Defined
Work Breakdown Structure	None	Preliminary	Defined	Defined	Defined
Project Code of Accounts	None	Preliminary	Defined	Defined	Defined
Contracting Strategy	Assumed	Assumed	Preliminary	Defined	Defined
Engineering Deliverables:					
Block Flow Diagrams	S/P	P/C	C	C	C
Plot Plans		S	P/C	C	C
Process Flow Diagrams (PFDs)		S/P	P/C	C	C
Utility Flow Diagrams (UFDs)		S/P	P/C	C	C
Piping & Instrument Diagrams (P&IDs)		S	P/C	C	C
Heat & Material Balances		S	P/C	C	C
Process Equipment List		S/P	P/C	C	C
Utility Equipment List		S/P	P/C	C	C
Electrical One-Line Drawings		S/P	P/C	C	C
Specifications & Datasheets		S	P/C	C	C
General Equipment Arrangement Drawings		S	P/C	C	C
Spare Parts Listings			S/P	P	C
Mechanical Discipline Drawings			S	P	P/C
Electrical Discipline Drawings			S	P	P/C
Instrumentation/Control System Discipline Drawings			S	P	P/C
Civil/Structural/Site Discipline Drawings			S	P	P/C

Figure 4. – Estimate Input Checklist and Maturity Matrix

REFERENCES

ANSI Standard Z94.2-1989. **Industrial Engineering Terminology: Cost Engineering**.
AACE International Recommended Practice No.17R-97, **Cost Estimate Classification System**.