

Via Overnight Mail

April 15, 2014

Luke McMahan - Project Geologist Wyoming Department of Environmental Quality Land Quality Division 2100 West 5<sup>th</sup> Street Sheridan, WY 82801

RE: Willow Creek ISR Project - Permit to Mine No. 478, 2013 Annual Report - Response to WDEQ-LQD Comments.

Dear Mr. McMahan:

Uranium One has reviewed the comments on the Willow Creek Annual Report provided by the WDEQ-LQD under cover of your letter dated November 18, 2014. Responses to these comments can be found in Attachment A of this cover letter. A page replacement package and "change guide" are also enclosed. All changes made to the Annual Report text, in response to the comments, have been underlined.

It should also be noted that WDEQ comment two (2), requesting a "Well Summary Table," is specific to the WDEQ In Situ Annual Report Format (ISARF) requirements. Thus, the electronic material supplied (Microsoft Excel spreadsheet) in response to comment 2 has not been included in the copy response package sent to the NRC.

Uranium One would like to apologize for the time delay in responding to these comments and hopes that the attached responses and information are adequate enough for you to quickly close out your Annual Report review.

Please contact me should you have any questions regarding this report.

Sincerely.

Tim McCullouah

Manager Site SHE

Encl: Attachment A, Comment Responses (2)

Annual Report Change Guide (2)

Page/Figure Replacement Package (2)

J. Winter - U1 Director of SHE w/o attachments Cc:

T. McCullough – Willow Creek Site SHE Manager w/attachments

R. Linton - NRC Willow Creek Project Manager w/attachments

# **WDEQ Comments**

 Submittal of Electronic Data: Electronic surface water flow data and surface water station details are not provided. Please provide this information on disc.

# Uranium One Response

Uranium One (U1) does not have permanent flow measuring equipment at the Willow Creek (W.C.) surface water sampling sites that record the data requested in the WDEQ-LQD spreadsheets:

"Uranium\_Surface\_Water\_Flow\_Data" and "Uranium\_Surface\_Water\_Station\_Details." Six of the seven surface water sampling locations at the W.C. project consist of ephemeral drainages that are often dry and cannot be sampled; or, if water is present there is little to no flow. Due to the ephemeral nature of the surface water sampling sites U1 environmental personnel estimate the flow, as shown in Table 3 of Appendix 1. In light of these circumstances concerning the surface water sampling sites, U1 requests that the WDEQ-LQD wave this requirement of the Permit 478 ISARF.

2. Submittal of Electronic Data: The Annual Report provides well completion details via links embedded in each well symbol on the ArcGIS electronic maps. This format is very useful and LQD appreciates Uranium One's submittal of such detailed information. However, this format does not provide a summary table listing the wells and associated data which I believe is the intent of the data request in the ISARF document. Please provide a summary table of the available data for those wells indicated on the "All Wells" map. An example of such a table can be found at: http://deq.state.wy.us/lqd/Uranium Data.htm.

# **Uranium One Response**

An electronic summary table representing the available data for the wells indicated on the "All Wells" map has been included with this response package. However, it should be noted that the total number of wells in the summary table is not congruent with the total number of wells on Worksheet 5 "Well Plugging and Abandonment" of the 2013-2014 surety estimate. The summary table shows a total of 4,165 wells including monitor, production and injection wells for Mine Units (MUs) 2-8 and MU10 while the surety shows a total of 4,192 wells. Given the 20 plus year history of the Christensen Ranch ISR project, multiple owners over that time, and that the well data for MUs 2-6 has been taken from a number of different sources; U1, believes that this is a notably accurate number of wells in comparison between the summary table and the surety.

Page 7, Item #6, Wellfield Disturbance: This section indicates that during the reporting period the total area disturbance associated with wellfield installation is approximately 58.4 acres. The areas of disturbance discussed in the rest of this section suggest that this number is a typo and should be increased to 114.7 acres. Please respond and/or revise the text to indicate the appropriate area of disturbance.

# **Uranium One Response**

The approximate area of wellfield disturbance has been corrected to 114.7 acres.

4. Page 7, Section G, New Wells/Wellfields Installed During the Reporting Period: This section states that 15 monitor wells were installed in MU10B. Only 11 monitoring wells (perimeter wells) are indicated on the "Installed Wells Map" for MU10B. Are some of these monitor wells located within the interior of the MU? Additionally, the "Installed Wells Map" shows three (3) wells (two deep monitor and one baseline) located in MU8. These wells are not discussed in the Annual Report text under this section. Please reference the installation of these wells under this section.

# <u>Uranium One Response</u>

This section has been revised to state that 11 perimeter monitor wells and three (3) interior shallow monitor wells were installed in MU10B. The wells installed in MU8 during the reporting period have also been addressed. Additionally, the associated maps and electronic files have been updated accordingly.

5. <u>Map "Environmental Monitoring Station Locations"</u>: Regional Ranch Well "Christensen Del Gulch Lower #13 is not indicated on this map. Please update the map with this environmental monitoring location.

# Uranium One Response

The "Environmental Monitoring Station Locations Map" has been updated to show the location of Regional Ranch Well "Christensen Del Gulch Lower #13."

Page 11, Section K, Projected Operations: Please add information to this section regarding the plans to temporarily surface cap 200 pilot holes associated with Mine Unit 10B, Modules 10-7 and 10-8. Additionally, indicate that this activity was approved by LQD (7/3/13 letter), that U1 plans to re-enter the holes on or before January 1, 2015, and that the status of these holes will be further addressed in the next Annual Report.

### **Uranium One Response**

Information regarding the temporary surface capping of approximately 200 pilot holes in MU10B, Modules 10-7 and 10-8, and future plans regarding them has been added to Section K, Projected Operations, as requested.

# **Reclamation Performance Bond Estimate Review**

7. Appendix 6, Page 3, Table I, Section II, Decommissioning and Surface Reclamation:
An inflation adjustment ("1% Adjustment for inflation (A-G)") was not applied to this Section as was in the previous Annual Report (2012-2013). Please provide an explanation why it is not applicable for the 2013-2014 surety estimate. If this adjustment is found to be omitted in error, please apply the adjustment to the surety estimate accordingly.

### **Uranium One Response**

The "1% Adjustment for Inflation" was not applied to surety Sections A-G as in the 2012-2013 Annual Report because the 2013-2014 surety estimate had a number of costs updated using current operating costs where applicable and the most recent version of WDEQ-LQD Guideline

- (G.L) 12 available at the time. Whereas, the G.L. 12 costs in the 2012-2013 estimate <u>were not updated</u> from the 2011-2012 surety estimate; hence, an inflation adjustment was applied to account for escalating costs that were not updated. Uranium One chose not to adjust costs to reflect current operating conditions and G.L. 12 and apply an inflation factor as well.
- 8. Appendix 6, Cost Summary Sheet, Page 1 of 21, Transportation and Disposal: "On-site Disposal" is listed as \$0.26 per cubic foot (\$6.97 per cubic yard) and referenced from the October 2012 WDEQ Guideline 12, Appendix K. The referenced Guideline lists Concrete disposal on-site as \$8.25/cubic yard (\$0.31/cubic foot). It appears that this should be adjusted through-out the surety estimate to reflect this cost referenced from the October 2012 Guideline. Please revise accordingly.

# Uranium One Response

The cost for "On-site Disposal" has been updated to reflect the October 2012 WDEQ-LQD G.L. 12 cost of \$8.25/ cubic yard (\$0.31/cubic foot).

9. Appendix 6, Worksheet #4, Page 11 of 21, Pond Reclamation Cost, Leak Detection System Removal: Based on review of Section 4.2.1.1 and Figure 4.3 of the Permit, the construction design indicates that leak detection media (sand) is placed on the bottom of the pond, over the leak detection gravel and piping, and is a part of the leak detection system. As indicated in the Annual Report under Section V, Reclamation Performance Surety Estimate, Page 18; the amount for Leak Detection System Removal was revised to specifically address the leak detection system. Does the estimated cost for Leak Detection System Removal include the leak detection media (sand)? Or, does this cost just include the gravel and piping? It appears that the sand would be part of the leak detection system. Please Respond.

### Uranium One Response

The estimated cost of the Leak Detection System Removal for C.R. Ponds 1 & 2 has been revised to account for a portion of the sand media.

10. Appendix 6, Worksheet #5, Page 13 of 21, Well P&A, Equipment Rental: Well Plugging and Abandonment Costs include equipment rental "Backhoe w/ Operator" for all other mine units, however this cost is not included for MU10 & MU11. Please provide a response regarding why this cost is not applicable to well plugging and abandonment for these mine units. If it is applicable, please revise the surety estimate to include this cost.

### **Uranium One Response**

Worksheet Five (5) "Well P&A" has been revised to include the equipment rental cost for "Backhoe w/ Operator" for MU10 and 11.

11. Per the ISARF document (Section V, Reclamation Performance Bond Estimate, Item C): "The bond estimate must be accompanied by a projected time schedule (Gantt Chart) showing the completion schedule for each major reclamation operation/task". A projected time schedule of this nature is not included with the Annual Report. Although

very little is planned for the 2013-2014 reporting period, please provide a projected time schedule for any significant reclamation work such as surface reclamation activities at the Irigaray Site.

# **Uranium One Response**

A projected time schedule or "Life of Mine" has been provided with this submittal as requested and required by WDEQ-LQD ISARF guidance.

# Uranium One Willow Creek Project - Permit to Mine No. 478 Permit to Mine No. 478 2013 Annual Report Submittal Change and Insertion Guide

Remove Insert

Permit to Mine No. 478 2013 Annual Report	
	Revised Page i
TOC: Page ii	Revised Page ii
TOC: Page iii	Revised Page iii
Page 4	Revised Page 4, and new page 4a (text carryover)
Page 7	Revised Page 7
Page 11	Revised Page 11 and new Page 11a (text carryover)
Page 17	Revised Page 17
Page 18	Revised Page 18
Page 19	Revised Page 19
Appendix 2: Drilling Activities & Well Details, Maps & ArcGIS	Appendix 2: Revised Drilling Activities & Well Details, Maps & ArcGIS Map Packages,
Map Packages CD	Well Summary Sheet CD
Appendix 4, Figure: Installed Wells Map	Appendix 4, Figure: Revised Installed Wells Map
Appendix 4, Figure: Irigaray & Christensen Ranch	Appendix 4, Figure: Revised Irigaray & Christensen Ranch Environmental Monitoring
Environmental Monitoring Station Locations	Station Locations
Appendix 4: Abandoned Wells Map	Appendix 4: Revised Abandoned Wells Map
Appendix 6: Reclamation Performance Bond Estimate	Appendix 6: Revised Reclamation Performance Bond Estimate and new "Life of Mine"
	schedule (page 21 of 21 of Appendix 6)

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# Appendix 5 Willow Creek Annual Wildlife Monitoring Report and Map

# Appendix 6 Reclamation Performance Bond Estimate Projected Time Schedule

# A. Operating Wellfields

# 1. Wells in Operation

The location of wells in operating Christensen Ranch wellfields is available in electronic format in Appendix 2 as "W.C. Operating Wellfields 2012-2013.pdf." In addition to this map an ArcGIS Map Package titled "W.C. Operating Wellfields.mpk" is also included. This Map Package contains a table with locations and completion details for all wells currently in operation at Christensen Ranch.

# 2. Well Completion Details

The location of all wells installed in conjunction with Willow Creek (Irigaray and Christensen Ranch Projects) mining activities is available in electronic format in Appendix 2 as "W.C. All Wells 2012-2013.pdf." In addition to this map an ArcGIS Map Package titled "W.C. All Wells 2012-2013.mpk" is also included. This Map Package includes the location details for all of the wells installed in conjunction with mining operations; however, the completion details are not available for all of the wells that are not currently in operation. Uranium One has been in the process of transitioning to an ArcSDE data platform during the current 2012-2013 reporting period. Consequently, the completion information for wells in restored mine units has not yet been integrated into the database with the primary focus being on wells currently in operation.

Additionally, Uranium One would like to note that due to the lengthy history of the Willow Creek Project, and the exuberant amount of data from numerous different sources, this is an enormous task. However, the database will continue to be updated as much as possible during the 2013-2014 reporting period and submitted with the next annual report. A well completion table for MUs 2-6 and MUs 10 A & B has also been included in Appendix 2.

# B. Water Balance/Hydrology

# 1. Injection and Production Fow Rates

Willow Creek's injection and production flow rates are continuously recorded from instrumentation at the Wellfield Module Buildings and electronically stored on the wellfield computer system (PLC). Table 1 located in Appendix 1 contains the monthly production, injection and bleed flow volumes for each wellfield area obtained during the reporting period. A review of Table 1 shows that the overall bleed rate for the Willow Creek Project was maintained at 1.2% of the production flow rate.

### 2. Potentiometric Surface Maps

Potentiometric maps of the monitored aquifers shallow zone, production zone and deep zone for the Willow Creek Project are included in Appendix 3. The maps were constructed using water level data from monitor wells and trend wells where applicable. This data was collected during June 2013.

# 3. Handling of Wastewater Stream

To control lixiviant migration in the wellfield at the Willow Creek Project, a bleed is taken from the process stream after the fluid exits the IX columns. The fluid then is treated in

# **Irigaray Site**

During the reporting period there were no construction activities that occurred at the Irigaray site. A Irigaray Project Area Facilities Map has been provided in Appendix 4.

# 4. New Pond Construction

No new ponds were constructed at the Willow Creek Project during the reporting period.

### 5. New Roads and Utilities

During the reporting period the estimated disturbance associated with wellfield access roads attributed to a total of 2.64 acres with 2.4 acres of this total occurring in Mine Unit 8 and 0.24 acres occurring in Mine Unit 10B.

Trunklines were installed at the Willow Creek Project with the construction activities associated with the wellfields in Mine Unit 8, Mine Unit 10A and Mine Unit 10B. The total estimated disturbance associated with the trunkline installation is 7.7 acres. Of this total acreage the trunkline disturbance for Mine Unit 8 was approximately 1.7 acres, the trunkline disturbance for Mine Unit 10A was approximately 1.5 acres and the trunkline disturbance for Mine Unit 10B was approximately 2.3 acres.

Powerlines were installed at the Willow Creek Project with the construction activities associated with the wellfiels in Mine Unit 8, Mine Unit 10A and Mine Unit 10B. It is estimated that the total disturbance associated with the powerline install is 7.5 acres. Due to the nature of minimal disturbance associated with installing powerlines this estimated disturbance will not be included with the overall disturbance during this reporting period.

All referenced locations that have been constructed during the reporting period are shown on the Christensen Project Area Facilities Map located in Appendix 4.

# 6. Wellfield Disturbance

During the reporting period the surface disturbance associated with wellfield installation is approximately <u>114.7</u> acres. Of this total, it is estimated that 56.3 acres were disturbed in Mine Unit 8, 18.2 acres were disturbed in Mine Unit 10A and 40.2 acres were disturbed in Mine Unit 10B.

# G. New Wells/Wellfields Installed During the Reporting Period

During this reporting period the Willow Creek Project installed 10 monitor wells, 122 injection wells and 60 production wells in Mine Unit 10A. All of Mine Unit 10A is currently in operation. Additionally, 14 monitor wells (11 perimeter and 3 interior shallow), 240 Injection wells and 135 production wells were installed in Mine Unit 10B. As of June 30, 2013 only one wellfield module is in operation in the Mine Unit 10B field. Also three wells in MU8 that failed MIT were plugged and re-drilled.

All referenced wells that have been installed during the reporting period are shown on the

# K. Projected Operations

Mining is scheduled to continue at Willow Creek Project with Mine Unit 5-2, Mine Unit 7, Mine Unit 8, Mine Unit 10A and Mine Unit 10B.

During the next reporting period, it is not anticipated that any new wellfield packages will be submitted for approval as any additional development activities have been suspended for the reporting period Aug 19, 2013 to Aug 18, 2014. Incidentally, U1 has already drilled approximately 200 pilot holes in MU10-B Modules 10-7 and 10-8 that still needed to be cased and completed. With the "sudden" cessation of development activities, this was put on hold and by letter dated June 24, 2013 U1 requested WDEQ-LQD permission to temporarily surface cap these pilot holes with plans to re-enter them on or before January 1, 2015. This request was approved by WDEQ-LQD by letter dated July 3, 2013. Uranium One plans to complete this temporary surface capping during July and August of 2013. The status of these pilot holes will be discussed in the 2013-2014 Annual Report.

### III. Reclamation / Restoration Activities

# A. Groundwater Restoration Activities

All groundwater restoration activities, including stabilization monitoring, ended at Christensen Ranch on May 30, 2005. The results of all wellfield restoration were compiled and submitted to the WDEQ-LQD and NRC on April 8, 2008 in the Wellfield Restoration Report Christensen Ranch Project (March 5, 2008). Uranium One (U1) received comments in the NRC Restoration Technical Evaluation Report (TER), dated October 23, 2012 concerning the CR Wellfield Restoration Report. The WDEQ-LQD District III staff had provided comments related to their review of the NRC TER in a letter dated January 7, 2013. The WDEQ-LQD staff had stated that the NRC TER was quite sufficient and the TER had affirmed the WDEQ review of the 2008 Report. In the January letter WDEQ had requested that Uranium One address the NRCs outlined issues accordingly and logically. By letters dated July 8, 2013 and July 9, 2013 Uranium One provided an update of activities and plans to address comments in the NRC TER to the NRC and WDEQ-LQD, respectively.

Currently Uranium One, with consultation and assistance from Petrotek, has conducted additional data collection efforts during the month of July and throughout September. These new data, in conjunction with the recent data collected by Uranium One, will be used to compare current production zone water quality concentrations with the stabilization water quality concentrations presented in the 2008 Restoration Report and ultimately respond to the comments and requests in the NRC Restoration TER in a timely manner.

# B. Well Plugging and Abandonment Reports

During the reporting period, a total of 65 wells were properly plugged and abandoned in accordance to WDEQ guidelines. This information has been submitted in the Quarterly WDEQ Reports and will not be duplicated in this report. This referenced data from July 1, 2012 through June 30, 2013 has been summarized and submitted to the WDEQ in the Quarterly Reports and an electronic copy of this data has been included in Appendix 2. All

of the referenced abandoned wells are shown on the Abandoned Wells map located in Appendix 4. Additionally, this map can be found in electronic format in Appendix 2 as "W.C. Abandoned Wells 2012-2013.pdf" and the associated details are included in an ArcGIS Map Package titled "W.C. Abandoned Wells 2012-2013.mpk."

based on the Consumer Price Index (CPI) for all urban consumers from September 2006 to June 2013.

It should be noted that currently in Mine Unit 10 (MU10) U1 has only completed wellfield modules 10-1 (Mod 10-1) through 10-6 and as previously mentioned no further development is planned during the next reporting period. However, U1 has chosen to retain the reclamation costs associated with the development of MU10 Modules 10-7 & 10-8 and for the installation of the monitoring well network and baseline restoration wells in MU11. This was done so that in the event uranium market prices become favorable during the 2013-2014 reporting period, the surety estimate will not require updating to resume development activities. A projected time schedule or "Life of Mine" for the W.C. project has been provided at the end of Appendix 6.

# **Cost Summary Sheet**

- All costs taken from WDEQ-LQD Guideline 12 have been updated based on the October 2012 revision.
- Operational costs have been updated as needed.

### Worksheet 1: Groundwater Restoration

- The wellfield area and number of wells for MU10 and MU11 has been adjusted to reflect actual conditions and development plans.
- The required WDEQ-WQD 3% annual adjustment for the plugging and abandonment of deep disposal wells CR DW-1 and CR 18-3 has been adjusted.
- Credit for completion of groundwater sweep for Christensen Ranch Mine Units 2-6 has been granted by the WDEQ but has not been authorized by NRC; therefore, separate WDEQ estimates and NRC estimates are provided.

### Worksheet 2: Plant Equipment Removal and Disposal

 During the 2012-2013 reporting period Uranium One planned to add an additional nine wellfield module buildings. However, only six were constructed in MU10 and none in MU11. The volume has been adjusted accordingly, and still includes reclamation costs for two additional module buildings in MU10.

# Worksheet 3: Building Demolition and Disposal

- During the 2012-2013 reporting period Uranium One planned to add an additional nine wellfield module buildings. However, only six were constructed in MU10 and none in MU11. The volume has been adjusted accordingly, and still includes reclamation costs for two additional module buildings in MU10.
- During the 2012-2013 reporting period U1 constructed a bicarbonate building in MU10 and a manifold building near the MU8 booster pump building, the volume of these structures has been accounted for.
- The soil under the Christensen satellite restoration extension has been added to the "Soil Removal and Disposal" section of worksheet 3.

# Worksheet 4: Pond Reclamation Cost

- Uranium One planned to reline Pond A and Pond C at the Irigaray facility during the 2012-2013 reporting period and accordingly placed the reclamation costs for these ponds in the 2012-2013 surety estimate. This did not occur during the 2012-2013 reporting is not planned to be completed during the 2013-2014 reporting period; thus, these costs have been removed from the surety.
- During the 2012-2013 reporting period a leak was detected in Christensen Ranch Evaporation Pond CR-2. The Leak Detection System Removal section of Worksheet 4 assumes that contamination will be found in the leak detection system whenever a leak has been detected in a pond during its operating life. During the reporting period a leak was detected in Christensen Ranch Brine Pond 1. Associated costs of leak detection system removal and 11(e)2 byproduct disposal for pond CR-2 have been added. It was also discovered that the costs for removal of the leak detection system for pond CR-1 included a miscalculation of the amount of volume and gravel to be removed from the leak detect system. The amount was based on the entire square footage of the pond bottom and not specifically the leak detection system. This volume has been corrected to account for a portion of the leak detection system sand media and the leak detection system gravel and piping.

# Worksheet 5: Well Plugging and Abandonment

- The total number of wells for CR MU10 has been increased to to reflect the actual number of wells installed during the 2012-2013 reporting period, and the possible development of Mods 10-7 & 10-8.
- The estimated number of wells to be installed in MU11 has been adjusted.

# Worksheet 6: Wellfield Equipment Removal & Disposal

# Section I: Wellfield Piping

The number of wells and amount of piping in CR MU10 and MU11 has been revised to reflect actual numbers and plans for the 2013-2014 reporting period.

### **Section II: Production Well Pumps**

The number of production well pumps has been revised to reflect the current number for CR MU10, and the projected number for MU11 has been revised.

### Section IV: Buried Trunkline

The quantity of trunkline for CR MU10 and CR MU11 has been revised to reflect the actual footage and the possible development of Mods 10-7 & 10-8.

# Section V: Manholes

 The number of manholes for CR MU10 and MU11 has been changed to reflect the actual number and the possible additional development of MU10.

# Worksheet 7: Topsoil Replacement & Revegetation

 Worksheet 7 has been revised to reflect no wellfield development is planned for CR MU11 during the 2013-2014 reporting period.

# **Worksheet 8: Miscellaneous Reclamation**

- For CR MU10 Sections I, II, and III have been adjusted to reflect actual numbers.
- For CR MU11 Sections I-IX have been adjusted to reflect that no wellfield development will take place during the 2013-2014 reporting period.

# Table 1, Summary:

The overall difference from the changes made to Worksheets 1 through 8 results in a decrease for the 2013-2014 WDEQ surety estimate in the amount of \$584,248 and a decrease of \$575,517 for the NRC estimate in comparison to the approved 2012-2013 surety estimate.

In summary, the new grand total surety estimate for WDEQ is \$20,715,064 and the NRC estimate is \$20,588,779. This represents a decrease of \$359,936 for the WDEQ estimate and a decrease of \$486,221 for the NRC estimate, under the current Irrevocable Letter of Credit issued in the favor of the State of Wyoming-DEQ in the amount of \$21,075,000 (NRC License SUA-1341 Amendment No. 1, Condition 9.5). Uranium One respectfully requests that WDEQ approve the new surety amount of \$20,715,064. Due to the differences between WDEQ and NRC surety estimates, Uranium One will carry an Irrevocable Standby Letter of Credit issued in favor of the WDEQ for the highest surety estimate of \$20,715,064.

RECURRING COST				
	Item	Amount (\$)	Units	Cost Basis
ELECTRICAL		<b>***</b> 0.40.50		G
Power Cost	t (actual costs)	\$0.04850	kw/hr	Current operating cost of electricity - Powder River Energy - Dec. 2012
LABOR RATES				
Supervisor		\$30.73	Hour	Operator Wage below + \$5.00 referenced in WDEQ Guideline 12, Section I
•	Engineers (Group 1 & 2)	1 1 4	Hour	From 2013 State Building Construction Prevailing Wages (referenced WDEO-LQD Guideline 121).
	Engineers (Group 3)	1	hour	From 2013 State Building Construction Prevailing Wages (referenced WDEQ-LQD Guideline 121).
Laborers (C		l i	hour	From 2013 State Building Construction Prevailing Wages (referenced WDEQ-LQD Guideline 121).
Laborers (C	• •	1 1	hour	From 2013 State Building Construction Prevailing Wages (referenced WDEQ-LQD Guideline 121).
Laborers	310up 2)	310.70	noui	170m 2010 blate bantang Colstration From the grave (1960 the a 10 by 200 diameter 12 ly).
ANALYTICAL				
Guideline 8	3	\$150.00	batch	Current rate used in worksheet 1
TRANSPORTATION				
AND DISPOS				
Distance to			(miles)	The distance from Christensen Ranch/Irigary to Casper Landfill is ~115 miles
Transportat			(\$/Ton-Mile)	Estimate from local trucking company (Dec. 2012)
	e landfill disposal cost .		Ton	Casper City landfill rates for outside of Natrona County commercial trailer over 8 feet in length.
	er Truck Load		(Tons)	
	er Truck Load	20.0	(Yds³)	
11e2 dispos			cubic yard	Average cost of graduated fee schedule for disposal of soils, sands, rubble etc., at NRC Licensed Facility (Shirley Basin) (August 2010)
11e2 dispos			cubic foot	Average cost of graduated fee schedule for disposal of soils, sands, rubble etc., at NRC Licensed Facility (Shirley Basin) (August 2010)
11e2 dispos			cubic foot	Average cost of graduated fee schedule for disposal of sludge, resin beads, fileter media, etc., at NRC Licensed Facility (Shirley Basin) (August 2010)
11e2 dispos			cubic yard	Average cost of graduated fee schedule for disposal of sludge, resin beads, fileter media, etc., at NRC Licensed Facility (Shirley Basin) (August 2010)
Onsite Disp			cubic foot	WDEQ Guidleine 12, Appendix K, Conrete Disposal On Site $$8.25yd^3 = $0.31ft^3$
	poration Cost Per Truck	\$2,100.00		Constant cost per load based on current contract with local trucking company
VEHICLE				
OPERATION				
Pick up 4X	4 (diesel)	\$27.47	unit	Cost per WDEQ Guideline 12 Table D-1
D				
PLANT				
DISMANTLING	lana D	6631	<b>.</b>	a . Websack to the tark to the
	loor Demolition	\$5.31	square foot	Costs per WDEQ Guideline 12, Appendix K
Cost of De	molition Per Ft <sup>3</sup>	\$0,28	Cubic foot	WDEQ Guideline 12, Appendix K
PLANT/EQUIPMENT				
DECONTAMINATION				
AND DISPOSAL				
Decontami	nation	\$0.13	square foot	Based on actual costs
Decontami	*** *		truck load	Based on actual costs
Decomann	manon.	₩.JJ.00	u uck Ivau	Dusta on actual costs
WELL PLUGGING AN	D ABANDONMENT			
Bentonite (		\$5.20	50# bag	Based on current costs from Casper Well Supply
Cement Co	· ·	1 :-0.4	per hole	Costs per WDEO Guideline 12, App. L. Abandonment and Sealing of Drill and Monitor Wells
32	•		F 11010	

EQU	IPM	ENT
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Dozer	\$93.42	acre	Cost per WDEQ Guideline 12, App M, rough grading/backfill
Backhoe Loader (Cat 430E 4WD)	\$36.24	hour	Cost per WDEQ Guideline 12, Table D-1
Loader (Cat 980H)	\$115.78	hour	Cost per WDEQ Guideline 12, Table D-1
Pick up 4X4 (gasoline)	\$32.91	hour	Cost per WDEQ Guideline 12, Table D-1
Hose Reel	\$45.00	hour	Costs for equipment from operating ISR facility

### CULVERT REMOVAL

20 foot culvert	\$137.83	Cost per WDEQ Guideline 12, Appendix J
per foot	\$6.89	foot

### ELECTRICAL POWERLINES & TRANSFORMERS

Distrbution/Transmission Lines	\$0.00	Tri-County Electric will remove at no cost, WDEQ Guideline 12, Appendix H
Transformers	\$0.00	Tri-County Electric will remove at no cost, WDEQ Guideline 12, Appendix H

### FENCING

Removal	\$0.32	linear foot	WDEQ Guideline 12, Appendix H
Keliloval	- 50.52	Jilicai 1001	"DEQ Guideline 12, Appendix II

### RECLAMATION

Discing and Seeding	\$280	acre	Operator Experience hased on Current Contractor Pricing
Top Soil Application	\$1.084	cu/yd	Costs per WDEQ Guideline 12, App. B
Unit Cost - Haul/Place (\$/Yd3)	\$1.084	cu/yd	Costs are for 1000 foot haul based on WDEQ Guideline 12, Appendix B, cost of \$.842/cubic yard
Unit Cost - Grading (\$/Ac)	\$93.42	acre	Costs per WDEQ Guideline 12, Appendix M D9 dozer

### References

Guideline 12 costs were updated using Oct. 2012 version.

		WDEQ Edimate	THIC Estimate
I GROUNDWATER RESTORATION - Worksheet 1:		\$8,258,352	\$8,516,267
Adjustment for Inflation = 15.1%	in Red		
(Sep. 2006 CPI All Urban Consumers, 202.9, to June 2013, 233.5	04)	\$1,245,631	\$1,284,533
Subtotal Groundwater Restoration		\$9,503,983	\$9,800,800
II DECOMMISSIONING AND SURFACE RECLAMATION:			
A. Process Plant(s) Equipment Removal and Disposal Worksheet 2		\$252,620	\$252,620
B. Plant Building(s) Demolition and Disposal Worksheet 3		\$1,320,085	\$1,320,085
C. Process Pond Sludge and Liner Handling		\$1,140,634	\$1,140,634
Worksheet 4 D. Well Abandonment		\$1,024,888	\$1,024,888
Worksheet 5 E. Wellfield Equipment Removal and Disposal		\$2,157,271	\$2,157,271
Worksheet 6  F. Topsoil Replacement and Revegetation		\$1,224,695	\$1,224,695
Worksheet 7 G. Miscellaneous Reclamation Activities		\$129,755	\$129,755
Worksheet 8 Sub Total - Decommissioning and Surface Reclamation		\$7,249,949	\$7,249,949
TOTAL RESTORATION AND RECLAMATION		\$16,753,932	\$17,050,749
SUBTOTAL		\$16,753,932	\$17,050,749
Min III O A A CALL III THE I O A CALL			
Miscellaneous Costs Associated with Third Party Contractors WDEQ	NRC		
Project Design \$200,000.00	0%		
Site Security & Liability Assurance \$200,000.00	0.0%		
Contractor Profit & Mobilization 10%	3%		
Pre-construction Investigation 1%	070		
Project Management 3%	2%		
On-site monitoring 0.5%	270		
Longterm Administration 2%			
Subtotal miscellaneous additions to surety 16.5%	5.0%	\$3,164,399	\$852,537.43
SUBTOTAL		\$19,918,331	\$17,903,286
11/2-70	NEC		
Contingency 4%	NRC 15%	\$796,733	\$2,685,493
GRAND TOTAL RESTORATION AND RECLAMATION		\$20,715,064	\$20,588,779

WDEQ Estimate NRC Estimate

ROCUNDWATER RESTORATION												WORKSHEET 1
February	Christensen	Christensen	Christensen	Christensen	Christensen						Irigaray	
Technical Assumptions:	Mine Unit											
Weillield Area (Pri)   522720   784080   890000   798944   \$10086   \$120986   \$201243   \$1190.476   \$1750020   \$137764   \$4700000   \$4177   \$22770   \$470000   \$150   \$10.0   \$10.0   \$20.4   \$13.4   \$1.71   \$2.71   \$40.17   \$2.00	: #11 · · ·	#10	#8	#7	#6	#5	#4	#3	#2	#6 Thru #9	#1 Thru #5	GROUNDWATER RESTORATION
Weillinid Area (Pt)											1	
Welffield Area (Acres)	780591	1337040	1750020	1180476	2021242	1210069	£10000	700044	900000	704000	522720	
Americad Oriz Zone Ariag (PT)   522720   784080   890000   798944   550183   1346004   2058434   1180476   1790000   133794   Avg Completed Thickness (PT)   15.0   16.0   11.0   10.0   12.7   19.0   21.8   118.0   20.												
Avg. Completed Thickness (F) 15.0 15.0 11.0 10.0 12.7 19.9 21.8 18.0 20.0 20.1 Affected Volume: Factor For Vertical Plane												
Affected Volume:   Factor For Vertical Flare   20%												
Factor For Vertical Flare	20.0	20.0	20.0	10.0	21.0	19.9	12.7	10.0	11.0	18.0	15.0	
Factor For Hutrocontal Flare   20%	20%	20%	200/	200/	2001	2004	2004	200/	200/	2001	2004	
Total Volume (FP)						_0,0	_+					
Porosity   28.0%   28.0%   26.0%   26.0%   26.0%   26.0%   28.0%   2												
Gallons Per Cublic Foot   7.48   7.												
Gallons Per Pore Volume   21958254.5   39524855.1   27417012.5   22374522.6   19568440.7   75057000   125664282   59506869.67   9801904.0   74938340.5   Production Wells in Unit(s)												
Number of Wells in Unit(s)   Production Wells   150   274   91   176   81   134   178   167   264   26   26   26   26   26   27   28   28   27   28   28   28   28								22274522.6				
Production Wells	·  •	14930340.51	36013040.2	55500005.07	123004292	73037000	19300440.1	22314322.0	2/4//012.5	39324030.1	21930234.3	
Injection Wells	1 0	261	264	167	170	124	04	170		274	150	
Monitor Welts   150   165   50   47   33   72   64   66   76   77   75   75   75   75   75		473										
Baseline Water Quality wells (prod or inj)		72										
Average Well Spating (F)		12										
Average Well Depth (Fi)   250   250   345   300   430   450   520   550   375   550		60										
CROUNDWATER SWEEP		500										
A PLANT & OFFICE   Operating Assumptions:     200	, 300		3731	330	320	430	430	300	545	230	250	Average vveii Depth (Ft)
A PLANT & OFFICE   Operating Assumptions:     200											1	I GROUNDWATER SWEEP
Operating Assumptions:	1									I		
Flowrate (gpm)	1										1	
PVS Required Total Gallons For Treatment Total Gallons For Treatment Total Gallons For Treatment Total Kalaf for Treatment Total Kalaf for Treatment Total Gallons For Treatment Total Gallons For Treatment Total Kalaf for Treat	200	200	200	200	200	200	200	200	200	l		
Total Gallons For Treatment Total KGals for Treatment Cost Assumptions: Power Avg Connected Hp Avg Connected Hp Sirkwih Gallons Per Hour Gallons Per Hour Cost Per Gallon Cost Per Gallon Cost Per Gallon Artiscalent (Si/Kgals) Artiscalent (Si/Kgals) Fulliting For Treatment Full Fulliting For Treatment Fulliting For Treatment Full Fulliting For Treatment Full Fulliting For Treatment Full Fulliting For Freatment Fulliting For Freatment Full Full Full Full Full Full Full Full	1 1	. 1	1	1	1	1	1	1	1			
Total KGals for Treatment	1 0	74938340.51	98019040.2	59506869.67	125664292	75057000	19568440.7	22374522.6	27417012.5			
Power	0	74938	98019		125664	75057	19568	22375	27417			
Avg Connected Hp			1				1				1	Cost Assumptions:
New Strip		.						1				Power
\$i/Kwh Gallons Per Minute Gallons Per Hour Cost Per Gallon Cost Per Gallon Cost Per KGal Antiscalent (\$i/Kgals) Elution (\$i/KGals) Total Cost Per KGal Total Treatment Utilitites Power (\$i/Month) Telephone (\$i/Month Time For Treatment Minutes For Treatment Minutes For Treatment Months For Treatment Mont	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	i		Avg Connected Hp
Gallons Per Minute   200   200   200   200   200   100   100   100   100   100   Gallons Per Hour   1.61	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	1		Kwh's/Hp
Gallons Per Minute	\$0.0485	\$0.0485	\$0.0485	\$0.0485	\$0.0485	\$0,0485	\$0.0485	\$0.0485	\$0.0485			
Cost Per Hour	100	100	100	100	100	200	200	200	200			
Cost Per Gallon	6000	6000	6000	6000	6000	12000	12000	12000	12000			Gallons Per Hour
Cost Per KGal (\$)   \$0.134   \$0.134   \$0.134   \$0.268   \$0.269   \$0.099	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	j		Cost Per Hour
Chemicals	0.00027	0.00027	0.00027	0.00027	0.00027	0.00013	0.00013	0.00013	0.00013			Cost Per Gallon
Antiscalent (S/Kgals) \$0.0947   \$0.0379   \$0.0	\$0.268	\$0.268	\$0.268	\$0.268	\$0.268	\$0.134	\$0.134	\$0.134	\$0.134			Cost Per KGal (\$)
Elution (\$/KGals)		.										Chemicals
Repair & Maintenance (\$/KGals)   \$0.0379   \$	\$0.0947	\$0.0947	\$0.0947	\$0.0947	\$0.0947	\$0.0947	\$0.0947	\$0.0947	\$0.0947	1		Antiscalent (\$/Kgals)
Analysis (S/KGals) Total Cost Per KGal Total Treatment Cost Utilities Power (S/Month) Telephone (S/Month) Telephone (S/Month Time For Treatment Minutes For Treatment Hours For Treatment Days For Treatment Days For Treatment Days For Treatment See Se	\$0.099	\$0.099	\$0.099	\$0.099	\$0.099	\$0.099	\$0.099	\$0.099	\$0.099			Elution (\$/KGals)
Total Cost Per KGal   \$0.497   \$0.493   \$0.481   \$0.416   \$0.556   \$0.500	\$0.0379	\$0.0379	\$0.0379	\$0.0379	\$0.0379	\$0.0379	\$0.0379	\$0.0379	\$0.0379	Ì		Repair & Maintenance (\$/KGals)
Total Treatment Cost Utilities   \$13,629   \$11,034   \$9,408   \$31,205   \$69,878   \$29,751   \$49,006   \$37,46*	\$0.000	\$0.000	\$0.000	\$0.000	\$0.056	\$0.050	\$0.115	\$0.127	\$0.131	!		Analysis (\$/KGals)
Utilities	\$0.500	\$0.500	\$0.500	\$0.500	\$0.556	\$0.416	\$0.481	\$0.493	\$0.497	1		Total Cost Per KGal
Power (\$/Month)	\$0	\$37,467	\$49,006	\$29,751	\$69,878	\$31,205	\$9,408	\$11,034	\$13,629			Total Treatment Cost
Telephone (\$/Month   S500   \$500		.										Utilities
Time For Treatment  Minutes For Treatment  Hours For Treatment  Days For Treatment  State Days For Treatment  Days For Treatment  State Days Per Month  Months For Treatment  30.4  Months For Treatment  317085  111873  97842  375285  628321  0  0  0  0  0  0  0  0  0  0  0  0  0		\$65			\$65	\$65	\$65	\$65	\$65			Power (\$/Month)
Minutes For Treatment	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500			Telephone (\$/Month
Hours For Treatment   2285   1865   1631   6255   10472   0   0   0   0   0   0   0   0   0		.	1			ł					ŀ	Time For Treatment
Days For Treatment   95   78   68   261   436   0   0   0		0								}	1	
Average Days Per Month 30.4 30.4 30.4 30.4 30.4 30.4 30.4 30.4		0								1	1	
Months For Treatment 3.1 2.6 2.2 8.6 14.3 0.0 0.0 0.0 Utilities Cost (\$) \$1,768 \$1,443 \$1,262 \$4,841 \$9,105 \$0 \$0 \$0	-	0								I	1	
Utilities Cost (\$) \$1,768 \$1,443 \$1,262 \$4,841 \$9,105 \$0 \$0 \$1		30.4										Average Days Per Month
		0.0								1		
		\$0								<u> </u>		
	\$0	\$37,467	\$49,006	\$29,751	\$77,983	\$36,046	\$10,670	\$12,477	\$15,397	\$0	\$0	
I GROUNDWATER SWEEP (Continued)									. — —	r		
B. WELLFIELD		.	į l							1	{	
Cost Assumptions:			į į							1	1	
Power	.1									I	1	
		20								1		
		3.00								1		
		10.0								1	l	
		30								1	i	
		0.830								1	1	
\$1,0485   \$0,0485   \$0,0485   \$0,0485   \$0,0485   \$0,0485   \$0,0485   \$0,0485   \$0,0485   \$0,0485   \$0,0485	\$0.0485	\$0.0485	\$0.0485	\$0.0485	\$0.0485	\$0.0485	\$0.0485	\$0.0485	\$0.0485	I	i	\$/Kwh

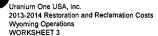
WORKSHEET 1											
	Irigaray	Irigaray	Christensen	Christensen	Christensen	Christensen	Christensen	Christensen	Christensen	Christensen	Christensen
	Mine Unit(s)	Mine Unit(s)	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Mine Unit
GROUNDWATER RESTORATION	#1 Thru #5	#6 Thru #9	#2	#3	#4	#5	<b>#</b> 6	#7	#8	#10	#11
Gallons Per Minute	1		200	200	200	200	200	200	200	200	200
Gallons Per Hour			12000	12000	12000	12000	12000	12000	12000	12000	12000
Cost Per Hour (\$)		· '	\$1.21	\$1.21	\$1.21	\$1.21	\$1.21	\$1.21	\$1.21	\$1.21	\$1.21
Cost Per Gallon (\$)			\$0,0001	\$0,0001	\$0,0001	\$0.0001	\$0.0001	\$0.0001	\$0,0001	\$0,0001	\$0.0001
Cost Per KGal (\$)			0.101	0.101	0.101	0.101	0.101	0.101	0.101	0.101	0.101
Repair & Maintenance (\$/KGals)			\$0.289	\$0.289	\$0.289	\$0.289	\$0.289	\$0.289	\$0.289	\$0.289	\$0.289
Total Cost Per KGal			\$0.390	\$0.390	\$0.390	\$0,390	\$0.390	\$0.390	\$0.390	\$0.390	\$0.390
		\$0								\$29,229	
TOTAL WELLFIELD COST	\$0		\$10,694	\$8,727	\$7,632	\$29,275	\$49,014	\$23,210	\$38,231		\$0
TOTAL GROUND WATER SWEEP COST	\$0	\$0	\$26,091	\$21,204	\$18,302	\$65,321	\$126,997	\$52,961	\$87,237	\$66,695	\$0
III DEVEDOS COMOCIO	٦										
II REVERSE OSMOSIS											
A. PLANT & OFFICE	4										
Operating Assumptions:											
Flowrate (gpm)			500	500	500	500	500	500	500	500	500
PV's Required			5.0	5.0	5.0	5.0	5.0	10.0	10.0	10.0	10.0
Total Gallons For Treatment			137085062	111872613	97842203.3	375285000	628321461	595068696.7	980190402	749383405.1	0
Total KGals for Treatment			137085	111873	97842	375285	628321	595069	980190	749383	0
Feed to RO (qpm)	1	1	500	500	500	500	500	500	500	500	500
Permeate Flow (gpm)	1	1	375	375	375	375	375	375	375	375	375
Brine Flow (gpm)	1	1	125	125	125	125	125	125	125	125	125
Average RQ Recovery	1	1	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%
Cost Assumptions:	1	1	1 ,5.0%	1 75.0%	,5.0%	,3.0%	'5.0%	70.078	13.078	1 3.0 %	7 3.3 70
	1	1	ĺ	1							ĺ
Power	1	1	,,,,,	FAA A-				500.0-	F00.00		E
Avg Connected Hp		i	560,00	560.00	560.00	560.00	560.00	560.00	560.00	560.00	560.00
Kwh's/Hp			0.830	0.830	0.830	0.830	0.830	0.830	0.830	0.830	0.830
\$/Kwh			\$0.0485	\$0.0485	\$0.0485	\$0.0485	\$0.0485	\$0.0485	\$0.0485	\$0.0485	\$0.0485
Gallons Per Minute			500	500	500	500	500	500	500	500	500
Gallons Per Hour	į		30000	30000	30000	30000	30000	30000	30000	30000	30000
Cost Per Hour (\$)			\$22.54	\$22.54	\$22.54	\$22.54	\$22.54	\$22.54	\$22.54	\$22.54	\$22.54
Cost Per Gallon (\$)			\$0.00075	\$0.00075	\$0.00075	\$0.00075	\$0.00075	\$0,00075	\$0.00075	\$0.00075	\$0.00075
Cost Per KGal (\$)			\$0.751	\$0.751	\$0.751	\$0.751	\$0.751	\$0.751	\$0.751	\$0.751	\$0.751
Chemicals			\$0.751	\$0.751	30.731	30.731	\$0.757	\$0.751	\$0.751	\$0.751	\$0.751
			****	****			60.040	-0.040	*****	*0.040	60.040
Caustic Soda (\$/KGals)			\$0.018	\$0.018	\$0.018	\$0.018	\$0.018	\$0.018	\$0.018	\$0.018	\$0.018
Antiscalent (\$/Kgals)			\$0.0947	\$0.0947	\$0.0947	\$0.0947	\$0.0947	\$0.0947	\$0.0947	\$0.0947	\$0.0947
Elution (\$/Kgals)			\$0.099	\$0.099	\$0.099	\$0.099	\$0.099	\$0.099	\$0.099	\$0.099	\$0.099
Repair & Maintenance (\$/KGals)			\$0.038	\$0.038	\$0,038	\$0.038	\$0.038	\$0.038	\$0.038	\$0.038	\$0.038
Sampling & Analysis (\$/KGals)	1		\$0.090	\$0.122	\$0.092	\$0.039	\$0.032	\$0.046	\$0.028	\$0.036	
Total Cost Per KGal (\$)			\$1,091	\$1.123	\$1,093	\$1.040	\$1.033	\$1.047	\$1.029	\$1.037	1
Total Pumping Cost (\$)	so	\$0	\$149,576	\$125,587	\$106,943	\$390,170	\$648,767	\$622,830	\$1,008,797	\$777,453	1
Utilities	"			1	******		44.01.01	,			1
Power (\$/Month)			\$65	\$65	\$65	\$65	\$65	\$65	\$65	\$65	\$65
Propane (\$/Month	1		\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500
Time For Treatment			\$300	\$300	4500	\$500	\$500	\$300	\$300	\$300	\$300
	1				l						
Minutes For Treatment	1	1	274170	223745	195684	750570	1256643	1190137	1960381	1498767	0
Hours For Treatment			4570	3729	3261	12510	20944	19836	32673	24979	0
Days For Treatment	1	1	190	155	136	521	873	826	1361	1041	0
Average Days Per Month			30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4
Months For Treatment			6.3	5.1	4.5	17.1	28.7	27.2	44.8	34.2	0.0
Utilities Cost (\$)	so	\$0	\$3,560	\$2,882	\$2,543	\$9,662	\$16,216	\$15,368	\$25,312	\$19,323	\$0
TOTAL PLANT & OFFICE COST	\$0	\$0	\$153,135	\$128,469	\$109,485	\$399,832	\$664,982	\$638,198	\$1,034,109	\$796,776	\$0
II REVERSE OSMOSIS (Continued)	1		4.00,.00	0120,400	, <del>4100,400</del>	, 0000,002		9000,100		0,00,,,0	
B. WELLFIELD	1										
	<del> </del>	1	1	<del></del>							
Cost Assumptions:	ł	1	1	l	1	ŀ	]				
Power	1	1									
Avg Flow/Pump (gpm)	1	1	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
Avg Hp/Pump	1	1	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Avg # of Pumps Required	1	1	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Avg Connected Hp	1	1	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0
Kwh's/Hp	1		0.830	0.830	0,830	0.830	0.830	0.830	0.830	0.830	0.830
\$/Kwh	1	1	\$0.0485	\$0.0485	\$0.0485	\$0.0485	\$0.0485	\$0.0485	\$0.0485	\$0.0485	\$0.0485
Gallons Per Minute	1	1	500	500	500	500	500	500	500	500	500
Gallons Per Hour	1	1	30000	30000	30000	30000	30000	30000	30000	30000	30000
	1	l									
Cost Per Hour (\$)	1		\$3.02	\$3.02	\$3.02	\$3.02	\$3.02	\$3.02	\$3.02	\$3.02	\$3.02
Cost Per Gallon (\$)	ŀ	i	\$0.0001	\$0.0001	\$0.0001	\$0.0001	\$0.0001	\$0.0001	\$0.0001	\$0.0001	\$0.0001
Cost Per KGal (\$)	1		\$0.101	\$0.101	\$0.101	\$0.101	\$0.101	\$0.101	\$0.101	\$0.101	\$0.101
Repair & Maintenance (\$/KGals)	1	I	\$0.289	\$0.289	\$0.289	\$0.289	\$0.289	\$0.289	\$0.289	\$0.289	\$0.289

OUNDWATER RESTORATION	Irigaray Mine Unit(s) #1 Thru #5	Irigaray Mine Unit(s) #6 Thru #9	Christensen Mine Unit #2	Christensen Mine Unit #3	Mine Unit #4	Christensen Mine Unit #5	Mine Unit	Christensen Mine Unit #7	Christensen Mine Unit #8	Christensen Mine Unit #10	Christens Mine Un #11
Total Cost Per KGal			\$0.390	\$0.390	\$0.390	\$0.390	\$0.390_	\$0.390	\$0.390	\$0.390	\$0.3
TOTAL WELLFIELD COST	\$0	\$0	\$53,413	\$43,590	\$38,123	\$146,225	\$244,818	\$231,861	\$381,919_	\$291,988	
Circulate 1 PV of Hydrogen Sulfide gas reductant	ì	1	\$23,661	\$19,309	\$16,888	\$64,774	\$108,448	\$51,354	\$84,590	\$64,672	ľ
\$0.863 per Kgal	<del> </del>										
TOTAL REVERSE OSMOSIS COST	\$0	\$0	\$230,210	\$191,368	\$164,496	\$610,831	\$1,018,248	\$921,413	\$1,500,618	\$1,153,435	
WASTE DISPOSAL WELL	<b>-</b> 1										
Operating Assumptions:	<del></del>	T									
Annual Evaporation Capacity (Gals)			1,917,612	1,917,612	1,917,612	1,917,612	1,917,612	1,917,612	1,917,612	1,917,612	1,917
Avg. Monthly Evap. Capacity (Gals)			159,801	159,801	159.801	159,801	159,801	159,801	159,801	159,801	159
Total Disposal Requirement	i	l	100,007	.00,001	100,007	,	,	,	,	,	
RO Brine Total Gallons			34,271,266	27,968,153	24,460,551	93.821.250	157.080,365	148,767,174	245,047,601	187,345,851	
RO Brine Total KGallons	i		34,271	27,968	24,461	93,821	157,080	148,767	245,048	187,346	ļ
Brine Concentration Factor			60%	60%	60%	60%	60%	60%	60%	60%	
Total Concentrated Brine (Gals)			20,562,759	16,780,892	14,676,330	56,292,750	94,248,219	89,260,305	147,028,560	112,407,511	
Months of RO Operation			6.3	5.1	4.5	17.1	28.7	27.2	44.8	34.2	1
Average Monthly Reqm't (Gallons)			3,263,930	3,290,371	3,261,407	3,291,974	3,283,910	3,281,629	3,281,888	3,286,769	İ
Monthly Balance for DDW (Gals)	ļ	J .	3,104,129	3,130,570	3,101,606	3,132,173	3,124,109	3,121,828	3,122,087	3,126,968	ļ
Total WDW Disposal (Gallons)	İ	1	19,556,013	15,965,907	13,957,226	53,560,153	89,661,930	84,913,717	139,869,476	106,942,317	
Total WDW Disposal (KGals)			19,556	15,966	13,957	53,560	89,662	84,914	139,869	106,942	
Cost Assumptions:											
Power		1									
Avg Connected Hp			100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100
WDW Avg Connected Hp			180.00	180.00	180.00	180.00	180.00	180.00	180.00	180.00	180
Kwh's/Hp			0.830	0.830	0.830	0.830	0.830	0.830	0.830	0.830	0.0
\$/Kwh		1	\$0.0485	\$0.0485	\$0.0485	\$0.0485	\$0.0485	\$0.0485	\$0.0485	\$0.0485	\$0.04
Gallons Per Minute			150	150	150	150	150	150	150	150	_
Gallons Per Hour			9000	9000	9000	9000	9000	9000	9000	9000	9
Cost Per Hour (\$) Cost Per Gallon (\$)			\$11.27 \$0.0013	\$11.27 \$0,0013	\$11.27 \$0.0013	\$11.27 \$0.0013	\$11.27 \$0.0013	\$11.27 \$0.0013	\$11.27 \$0.0013	\$11.27 \$0.0013	\$11 \$0.00
Cost Per Galloff (\$)	İ		\$1.252	\$1.252	\$1.252	\$1.252	\$1.252	\$1.252	\$0.0013	\$1.252	\$0.00
Chemicals (\$/Kgals)			\$1.232	31.232	\$1.232	\$1.232	\$1.202	\$1.232	\$1,232	\$1.232	31.4
RO Antiscalent (\$/Kgals)			\$0.190	\$0.190	\$0.190	\$0,190	\$0,190	\$0.190	\$0,190	\$0,190	\$0.
WDW Antiscalent (\$/Kgals)	1	1 .	\$0.130	\$0.130	\$0.130	\$0.130	\$0.237	\$0.237	\$0.237	\$0.237	\$0.2
Sulfuric Acid (\$/Kgals)	İ		\$0.534	\$0.534	\$0.534	\$0.534	\$0.534	\$0.534	\$0.534	\$0.534	\$0.5
Corrosion Inhibitor	ľ		\$0.000	\$0.000	\$0,000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.0
Algacide			\$0.111	\$0.111	\$0.111	\$0.111	\$0.111	\$0.111	\$0.111	\$0.111	\$0.1
Repair & Maint (\$/Kgals)			\$0.077	\$0.077	\$0.077	\$0.077	\$0.077	\$0.077	\$0.077	\$0.077	\$0.0
Total Cost Per KGal	1 .		\$2.401	\$2.401	\$2.401	\$2.401	\$2.401	\$2.401	\$2.401	\$2.401	\$2.4
TOTAL WASTE DISPOSAL WELL COST			\$46,961	\$38,340	<b>\$33,517</b>	\$128,618	\$215,312	\$203,910	\$335,879	\$256,809	
	_										
STABILIZATION MONITORING		_								_	
Operating Assumptions: Time of Stabilization (mos)			9	9	9	9	9	9	9	9	
Frequency of Analysis (mos)		1	3	3	3	3	3	3	3	3	
Total Sets of Analysis (1105)		1	١	3	3	4	اړ ا	3	3	4	
Cost Assumptions:			7	7	7	-	"!	7		•	
Generator Rental per sample set		1 .	\$280	\$280	\$280	\$280	\$280	\$280	\$280	\$280	<b>S</b> :
Analytical costs per set	1	1	\$3,600	\$2.850	\$2,250	\$3,750	\$7,050	\$1.650	\$2,100	\$1,800	S:
Total Sampling & Analysis Cost (\$)			\$15,520	\$12,520	\$10,120	\$16,120	\$29,320	\$7,720	\$9,520	\$8,320	\$4,
Utilities (Power + Telephone per month)			\$565	\$565	\$565	\$565	\$565	\$565	\$565	\$565	\$
Total Utilities Cost (\$)			\$5,085	\$5,085	\$5,085	\$5,085	\$5,085	\$5,085	\$5,085	\$5,085	\$5,0
TOTAL STABILIZATION COST	\$0	\$0	\$20,605	\$17,605	\$15,205	\$21,205	\$34,405	\$12,805	\$14,605	\$13,405	
		··									
LABOR (Irigaray and Christensen Combined)											
Cost Assumptions	Cost/Hour	Hours/Year	Cost								
Crew:											
1 Supervisor	\$25.00	2080	\$52,000								
4 Operators	\$20.00	2080	\$166,400								
2 Maintenance	\$20.00	2080	\$83,200								
2 Vehicles	\$12.00	2080	\$49,920								
Cost per Year	1		\$351,520								
Time Described Vocas		7									
Time Required - Years	2.0	1									
TOTAL RESTORATION LABOR COST	\$703,040	1									

	Irigaray	Irigaray	Christensen	Christensen	Christensen	Christensen	Christensen	Christensen	Christensen	Christensen	Christensen	
	Mine Unit(s)	Mine Unit(s)	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Mine Unit	
GROUNDWATER RESTORATION	#1 Thru #5	#6 Thru #9_	#2	#3	#4	#5	#6	#7	#8	#10	#11	
	Irigaray	Christensen	Total									
	Mine Unit(s)	Mine Unit	Christensen									
	#1 Thru #9	#2 Thru #4	& Irigaray									
VI RESTORATION CAPITAL REQUIREMENTS												
I Deep Disposal Well(s) - new		\$0										
II Plug and Abandon CR DW-1	ł	\$73,950										
III Plug and Abandon CR 18-3		\$66,250										
IV 500 GPM Reverse Osmosis Unit		\$0										
WDEQ-WQD 3% Annual Adjustment		\$8;412										
Total	\$0	\$148,612										

	Irigaray	Irigaray	Christensen	Christensen	Christensen	Christensen	Christensen	Christensen	Christensen	Christensen	Christensen	
	Mine Unit(s)	Mine Unit(s)	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Mine Unit	TOTAL
	#1 Thru #5	#6 Thru #9	#2	#3	#4	#5	#6	#7	#8	#10	#11	
SUMMARY:							_					
I GROUNDWATER SWEEP	\$0	\$0	\$26,091	\$21,204	\$18,302	\$65,321	\$126,997	\$52,961	\$87,237	\$66,695	\$0	
II REVERSE OSMOSIS	\$0	\$0	\$230,210	\$191,368	\$164,496	\$610,831	\$1,018,248	\$921,413	\$1,500,618	\$1,153,435	\$0	
III WASTE DISPOSAL WELL	\$0	\$0	\$46,961	\$38,340	\$33,517	\$128,618	\$215,312	\$203,910	\$335,879	\$256,809	\$0	
IV STABILIZATION	\$0	\$0	\$20,605	\$17,605	\$15,205	\$21,205	\$34,405	\$12,805	\$14,605	\$13,405	\$0	
SUB TOTAL	\$0	\$0	\$323,867	\$268,517	\$231,520	\$825,975	\$1,394,962	\$1,191,089	\$1,938,340	\$1,490,345	so [	\$7,664,615
V LABOR	J					· <u> </u>			-			\$703,040
VI CAPITAL							_				[	\$148,612
TOTAL GROUNDWATER RESTORATION COST												\$8,516,267
Credit for Completion of Groundwater Sweep (WDEQ)			\$26,091	\$21,204	\$18,302	\$65,321	\$126,997	\$0	\$0	\$0	\$0	\$257,915
Credit for Completion of Reverse Osmosis (WDEQ)											[	\$0
Credit Completion of Stabilization Monitoring (WDEQ)											Ī	\$0
Credit Subtotal			\$26,091	\$21,204	\$18,302	\$65,321	\$126,997	\$0	\$0	\$0	<b>\$</b> 0	\$257,915
GRAND TOTAL WDEQ	\$0	\$0	\$297,776	\$247,313	\$213,217	\$760,654	\$1,267,965	\$1,191,089	\$1,938,340	\$1,490,345	\$0	\$8,258,352
GRAND TOTAL NRC (no credit)	\$0	\$0	\$323,867	\$268,517	\$231,520	\$825,975	\$1,394,962	\$1,191,089	\$1,938,340	\$1,490,345	\$0	\$8,516,267

				Irigaray						Christensen		
	Maint Area &	Main Process	Expansion	Resin +Sand	Dry Pack	Restoration		Satellite	Resin + Sand	Restoration	Wellfield	
PLANT EQUIPMENT REMOVAL AND DISPOSAL	Laboratory	Building	Building	Filter Media	Area	Building	Sub Total	Plant	Filter Media	Extension	Modules	Sub Total
							_					
Volume (Yds³)	40	. 0	188	110	40			116			97.5	
Quantity Per Truck Load (Yds³)	20	20	20	20	20			20		20	20	ļ
Number of Truck Loads	2.0	0.0	9.4	5.5	2.0	0.0		5.80	10.8	2.1	4.9	
Decontamination Cost												
Decontamination Cost (\$/Load)	\$435	\$435	\$435	\$435	\$435	\$435		\$435	\$435	\$435	\$435	
Percent Requiring Decontamination	20.0%	100.0%	100.0%	0.0%	100.0%	100.0%		100.0%	0.0%	100.0%	100.0%	
Total Cost	\$174	\$0	\$4,089	\$0	\$870	\$0	\$5,133	\$2,523_	\$0	\$914	\$2,121	\$5,557
II Dismantle and Loading Cost												
Cost Per Truck Load (\$)	\$650	\$650	\$650	\$650	\$650	\$650		\$650	\$650	\$650	\$650	
Total Cost	\$1,300	\$0	\$6,110	\$3,575	\$1,300	\$0	\$12,285	\$3,770	\$7,007	\$1,365	\$3,169	<u>\$15,311</u>
III Oversize Charges												
Percent Requiring Permits	40.0%	40.0%	40.0%	0.0%	60.0%	40.0%		40.0%	0.0%		0.0%	
Cost Per Truck Load (\$)	\$326	\$326	\$326	\$326	\$326	\$326		\$326	\$326	\$326	\$326	
Total Cost	\$261	\$0	\$1,226	\$0	\$391	\$0	\$1,878	\$756	\$0	\$274	\$0	\$1,030
IV Transportation & Disposal												
A. Landfill	-											
Percent To Be Shipped	80.0%	80.0%	80.0%	0.0%	50.0%	80.0%		80.0%	0.0%	80.0%	80.0%	
Transportation Cost Per Truck Load	\$483	\$483	\$483	\$483	\$483	\$483		\$483	\$483	\$483	\$483	ļ
Transportation Cost	\$773	\$0	\$3,632	\$0	\$483	\$0		\$2,241	\$0	\$811	\$1,884	
Disposal Fee Per Ton (1 yd <sup>3</sup> = 1 ton)	\$58.50	\$58.50	\$58.50	\$58.50	\$58.50	\$58.50		\$58.50	\$58.50	\$58.50	\$58.50	
Disposal Cost (\$)	\$1,872	\$0	\$8,798	\$0	\$1,170	\$0		\$5,429	\$0	\$1,966	\$4,563	
Total Cost	\$2,645	\$0	\$12,431	\$0	\$1,653	\$0		\$7,670	\$0	\$2,777	\$6,447	
B. Licensed Site			_			·						
Percent To Be Shipped	20.0%	20.0%	20.0%	100.0%	50.0%	20.0%		20.0%	100.0%	20.0%	20.0%	
Transportation Cost Per Truck Load	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100		\$2,100	\$2,100	\$2,100	\$2,100	
Transportation Cost	\$840	\$0	\$3,948	\$11,550	\$2,100	\$0		\$2,436	\$22,638	\$882	\$2,048	ļ
Disposal Cost Per Cubic Foot (\$)	\$11.00	\$11.00	\$11.00	\$11.00	\$11.00	\$11.00		\$11.00	\$11.00	\$11.00	\$11.00	
Quantity Per Truck Load (Yds3)	20.0	20.0	20.0	20.0	20.0	20.0		20.0	20.0	20.0	20.0	
Quantity Per Truck Load (Ft³)	540	540	540	540	540	540		540	540	540	540	
Disposal Cost	\$2,376	\$0	\$11,167	\$32,670	\$5,940	\$0		\$6,890	\$64,033	\$2,495	\$5,792	
Total Cost Licensed Site	\$3,216	\$0	\$15,115	\$44,220	\$8,040	\$0		\$9,326	\$86,671	\$3,377	\$7,839	
Total Cost Transportation & Disposal	\$5,861	\$0	\$27,546	\$44,220	\$9,693	\$0	\$87,320	\$16,996	\$86,671	\$6,154	\$14,286	\$124,107
									· · · · · · · · · · · · · · · · · · ·			
TOTAL COST	\$7,596	\$0	\$38,971	\$47,795	\$12,254	\$0	\$106,615	\$24,046	\$93,678	\$8,706	\$19,575	\$146,005
TOTAL COST - IRIGARAY AND CHRISTENSEN	J										l	\$252,620



		Irigaray						Christensen				
Maint Area & Warehouse 1	fain Process	Expansion	Dry Pack	Restoration		Satellite	Wellfield	Booster	Restoration	Office		
Laboratory & Offices	Building	Building	Area	Building	Sub Total	Plant	Modules	Pump Bidgs.	Extension	Building	Warehouse	Sub Totai

### BUILDING DEMOLITION AND DISPOSAL

Structural Character	1 Story	1 Story	1 Story	1 Story	3 Story	1 Story	_	2 Story	1 Story	1 Story	2 Story	1 Story	1 Story	
	Steel Frame	Steel Frame	Steel Frame	Steel Frame	Steel/Masonry	Steel Frame		Steel Frame	Pre Fab (39)	Pre Fab (5)	Steel Frame	Pre-Fab_	Steel Frame	
Demolition Volume (Ft*)	179400	108720	430400	386400	126000	69640		192000	168480	75920	104800	64800	11000	
Cost of Demolition Per Ft*	\$0.2780	\$0.2780	\$0.2780	\$0.2780	\$0,2780	\$0.2780		\$0.2780	\$0.2780	\$0.2780	\$0.2780	\$0.2780	\$0.2780	
Demolition Cost (\$)	\$49,873	\$30,224	\$119,651	\$107,419	\$35,028	\$19,360	\$361,556	\$53,376	\$46,837	\$21,106	\$29,134	\$18,014	\$3,058	\$171,526
Factor For Gutting	15.0%	10.0%	30.0%	10.0%	20.0%	10.0%		20.0%	0.0%	0.0%		10.0%	10.0%	
Cost For Gutting (\$)	\$7,481	\$3,022	\$35,895	\$10,742	\$7,006	\$1,936	\$66,082	\$10,675	\$0	\$0	\$5,827	\$1,801	\$306	\$18,609
Weight (pounds)	158761	96212	380885	341947	111504	61628		169912	66660	28032	63717	38802	9735	1
Weight per Truckload (Tons)	20	20	20	20	20	[ 20		20	20		20	20	20	
Number of Truckloads	4.0	2.4	9.5	8.5	2.8	1.5		4.2	1.7	0.7	1.6	1.0	0.2	
Distance to Landfill	115	115	115	115	115	115		115	115	115	115	115	115	1
Unit Cost (Ton/Mile)	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21		\$0.21	\$0.21	\$0.21	\$0.21	\$0.21	\$0.21	
Transportation Cost per Truckload	\$483	\$483	\$483	\$483	\$483	\$483		\$483	\$483	\$483	\$483	\$483	\$483	i
Transportation Cost (\$)	\$1,917	\$1,162	\$4,599	\$4,129	\$1,346	\$744	\$13,898	\$2,052	\$805	\$338	\$769	\$469	\$118	\$4,551
Disposal Cost per Truckload	\$1,170.00	\$1,170.00	\$1,170.00	\$1,170.00	\$1,170.00	\$1,170.00		\$1,170.00	\$1,170.00		\$1,170.00		\$1,170.00	
Disposal Cost (\$)	\$4,644	\$2,814	\$11,141	\$10,002	\$3,261	\$1,803	\$33,665	\$4,970	\$1,950	\$820	\$1,864	\$1,135	\$285	\$11,023
TOTAL COST	\$63,9 <u>15</u>	\$37,223	\$171,287	\$132,292	\$46,642	\$23,843	\$475,200	\$71,073	\$49,592	\$22,264	\$37,594	\$21,419	\$3,766	\$205,709
TOTAL COST IRIGARAY AND CHRISTENSEN	J												L	\$680,909

### CONCRETE DECONTAMINATION, DEMOLITION & DISPOSAL

Area (Ft²)	8020	7100	17600	18400	5600	3600		9600	0	1800	5240	0	1000	
Average Thickness (Ft)	0.5	0.5	0.5	0.5	1	0.5		0.5	0.0	0.5	0.5	0.0	0.5	
Volume (Ft*)	4010	3550	8800	9200	5600	1800		4800	0	900	2620	0	500	
Percent Requiring Decontamination	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%		100.0%	0.0%	100.0%	100.0%	0.0%	0.0%	
Percent Decontaminated	0.0%	0.0%	75.0%	75.0%	40.0%	75.0%		75.0%	0.0%	100.0%	100.0%	0.0%	0.0%	
Decontamination (\$/Ft²)	\$0.134	\$0.134	\$0.134	\$0.134	\$0.134	\$0.134		\$0.134	\$0.134	\$0.134	\$0.134	\$0.134	\$0.134	
Decontamination Cost	\$0	\$0	\$1,769	\$1,849	\$300	\$362	\$4,280	\$965	\$0	\$241	\$702	\$0	\$0	\$1,908
Demolition (\$/Ft²)	\$5.31	\$5.31	\$5.31	\$5.31	\$5.31	\$5.31		\$5.31	\$5.31	\$5.31	\$5.31	\$5.31	\$5.31	
Demolition Cost	\$42,586	\$37,701	\$93,456	\$97,704	\$29,736	\$19,116	\$320,299	\$50,976	\$0	\$9,558	\$27,824	\$0	\$5,310	\$93,668
Transportation & Disposal	1 1								1	1			1	
A. Onsite Disposal	1 1			1		1			1					
Percent to be Disposed Onsite	100%	100%	90%	90%	40%	90%		90%	0%	100%	100%	0%	100%	
Transportation Cost	\$0	\$0	\$0	\$0	\$0	\$0		\$0	\$0	\$0	\$0	so	\$0	
Disposal Cost per Cubic Foot	\$0.310	\$0.310	\$0.310	\$0.310	\$0.310	\$0.310		\$0.310	\$0.310	\$0.310	\$0.310	\$0.310	\$0.310	
Disposal Cost (\$)	\$1,243	\$1,101	\$2,455	\$2,567	\$694	\$502	\$8,562	\$1,339	\$0	\$279	\$812	\$0	\$155	\$2,585
B. Licensed Site					i	ŀ		,	l					
Percent to be Shipped	0%	0%	10%	10%	60%	10%		10%	100%	0%	0%	100%	0%	
Transportation Cost per Truckload	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100		\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	
Transportation Cost (\$)	\$0	\$0	\$3,422	\$3,578	\$13,067	\$700	\$20,767	\$1,867	\$0	\$0	\$0	\$0	so	\$1,867
Disposal Cost per Cubic Foot	\$3.70	\$3.70	\$3.70	\$3.70	\$3.70	\$3.70		\$3.70	\$3.70	\$3.70	\$3.70	\$3.70	\$3.70	
Quantity Per Truck Load (Yds²)	20	20	20	20	20	20		20	20	20	20	20	20	
Quantity Per Truck Load (Ft*)	540	540	540	540	540	540		540	540	540	540	540	540	
Disposal Cost (\$)	\$0	\$0	\$3,259	\$3,407	\$12,444	\$667	\$19,778	\$1,778	\$0	\$0	\$0	\$0	\$0	\$1,778
TOTAL COST	\$43,829	\$38,802	\$104,361	\$109,105	\$56,242	\$21,347	\$373,686	\$56,924	\$0	\$10,078	\$29,339	\$0	\$5,465	\$101,806
TOTAL COST IRIGARAY AND CHRISTENSEN														\$475,492

### SOIL REMOVAL & DISPOSAL

Assume removal of 3" of Contaminated Soil under															
Primary Areas, Disposal at a Licensed facility.															
Removal with Loader (\$116/hr) \$116	\$0	\$0	\$1,887	\$1,973	\$600	\$386	\$4,846	\$1,029	\$0	\$0	\$562	\$0	\$0	\$1,591	ı
Quantity to be Shipped (Ft³)	0	0	4400	4600	1400	900		2400	0	0 [	1310	0	0		l
Transportation Cost per Truckload	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100		\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100		ı
Transportation Cost (\$)	\$0	\$0	\$17,111	\$17,889	\$5,444	\$3,500	\$43,944	\$9,333	\$0	\$0	\$5,094	\$0	\$0	\$14,428	ı
Disposal fee Per Cubic Foot(\$)	\$3.70	\$3.70	\$3,70	\$3.70	\$3.70	\$3.70		\$3.70	\$3.70	\$3.70	\$3.70	\$3.70	\$3.70		ı
Quantity per Truckload (Ft*)	540	540	540	540	540	540		540	540	540	540	540	540		ı
Disposal Cost (\$)	\$0	\$0	\$16,296	\$17,037	\$5,185	\$3,333	\$41,852	\$8,889	\$0	\$0	\$4,852	\$0	\$0	\$13,741	
Removal, NPDES Pts.					į						- 1				
Quantity to be Shipped (Ft <sup>a</sup> )			559	ŀ		i i		5,030							ı
Transportation Cost per Truckload	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100		\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100		ı



				Irigaray						Christensen				
	Maint Area &	Warehouse	Main Process	Expansion	Dry Pack	Restoration		Satellite	Wellfield	Booster	Restoration	Office		
	Laboratory	& Offices	Building	Building	Area	Building	Sub Total	Plant _	Modules	Pump Bldgs.	Extension	Building	Warehouse	Sub Total
Transportation Cost (\$)	\$0	\$0	\$2,174	\$0	\$0	\$0	\$2,174	\$19,562	\$0	\$0	\$0	\$0	\$0	\$19,562
Disposal fee Per Cubic Foot(\$)	\$3.70	\$3.70	\$3.70	\$3.70	\$3.70	\$3.70		\$3.70	\$3.70	\$3.70		\$3.70	\$3.70	ł
Quantity per Truckload (Ft*)	540	540	540	540	540	540		540	540	540	540	540	540	
Disposal Cost (\$)	\$0	\$0	\$2,070	\$0	\$0	\$0	\$2,070	\$18,630	\$0	\$0	\$0	\$0	\$0	\$18,630
Total Cost	so	\$0	\$39,538	\$36,898	\$11,230	\$7,219	\$94,885	\$57,443	\$0	\$0	\$10,508	\$0	\$0	\$67,951
TOTAL COST	\$0_	\$0	\$39,538	\$36,898	\$11,230	\$7,219	\$94,885	\$57,443	\$0	\$0	\$10,508	\$0	\$0	\$67,951
TOTAL COST IRIGARAY AND CHRISTENSEN														\$162,836

RADIATION SURVEY					1			1				- 1		
			_					1						
Area required (acres)	0.18	0.16	0.40	0.42	0.13	0.08		0.22	0.00	0.04	0.12	0.00	0.02	
Survey Cost (\$/acre)	\$520.00	\$520.00	\$520.00	\$520.00	\$520.00	\$520.00		\$520.00	\$520.00	\$520.00	\$520.00	\$520.00	\$520.00	
TOTAL SURVEY COST (\$)	\$96		\$210	\$220	\$67	\$43	\$636	\$115	\$0	\$21	\$63	\$0	\$12	\$211
									_					

TOTAL COST	\$107,840	\$76,024	\$315,396	\$278,516	\$114,180	\$52,452	\$944,408	\$185,555	\$49,592	\$32,363	\$77,504	\$21,419	\$9,243	\$375,677
TOTAL COST IRIGARAY AND CHRISTENSEN														\$1,320,085

WORKSHEET 4										Christenser			
				Irigaray				Brine	Brine	Brine		Permeate	
POND RECLAMATION COST	Pond A	Pond B	Pond C	Pond D	Pond E	Pond RA	Pond RB	Pond 1	Pond 2	Pond 3	Pand 4	Pond	
POND SLUDGE:		0.450		0.450		0.450	0.156	0.166	0.222	0.143	0 068	0.000	
Average Sludge Depth (Ft) Average Area of Sludge (Ft²)		0.156 50.604		0 156 50 604		0.156 64.299	64,299	20,909	20,909	20,909	20,909	0.000	
Volume of Sludge (FP)		7,907		7,907		10.047	10,047	3,466	4,651	2,983	1,414	:	
Volume of Sludge (Yds²)		293		293		372	372	128	172	110	52	ا ا	
Volume of Sludge Per Truck Load (Yds²)		20.0		20.0		20.0	20.0	20.0	20.0	20.0	20.0	20.0	
# of Truck Loads of Sludge		14.7		14.7		18.6	18.6	64	8.6	5.5	2.6	0.0	
Sludge Handling Cost Per Load (\$)	· '	\$240.00		\$240 00		\$240.00	\$240.00	\$240 00	\$240.00	\$240.00	\$240 00	\$240.00	
Total Sludge Handling Cost (\$)	\$0	\$3,528	\$0	\$3,528	\$0	\$4,464	\$4,464	\$1,536	\$2,064	\$1,320	\$624	. \$0_	
Transportation & Disposal	ļ ,				l .							!!	
Percent To Be Shipped to Licensed Site		100.0%		100.0%		100 0%	100.0%	100.0%	100.0%	100 0%	100.0%	100.0%	
Transportation Cost per Truckload		\$2,100 \$30.870		\$2,100 \$30,870		\$2,100 \$39,060	\$2,100 \$39,060	\$2,100 \$13,440	\$2,100 \$18,060	\$2,100 \$11,550	\$2,100 \$5,460	\$2,100 \$0	
Transportation Cost (\$) Disposal Cost Per Cubic Foot (\$)		\$30,870 \$11.00		\$30,870		\$11.00	\$11.00	\$13,440	\$10,000	\$11,550	\$11.00	\$11.00	
Quantity Per Truck Load (Yds²)		20.0		20.0		20.0	20.0	20.0	20.0	20.0	20.0	20 0	
Quantity Per Truck Load (Ft <sup>a</sup> )		540		540		540	540	540	540	540	540	540	
Disposal Cost (\$)		\$87,318		\$87,318		\$110.484	\$110,484	\$38,016	\$51,084	\$32,670	\$15,444	\$0	
Total Transportation & Disposal (\$)	\$0	\$118,188	\$0	\$118,188	\$0	\$149,544	\$149,544	\$51,456	\$69,144	\$44,220	\$20,904	\$0	
TOTAL SLUDGE COST (\$)	\$0	\$121,716	\$0	\$121,716	\$0	\$154,008	\$154,008	\$52,992	\$71,208	\$45,540	\$21,528	\$0	\$742,716
POND LINER:		4.70		4.70		2.17	2.17	1.10	1 10	1,10	1.10	0.00	
Total Pond Area (Acres) Total Pond Area (Ft²)		1.72 74923.2		1.72 74923.2		94525 2	94525.2	47916	47916	47916	47916	0.00	
Factor For Sloping Sides		20.0%		20.0%		20.0%	20.0%	20.0%	20.0%	20.0%	20 0%	0.0%	
Total Liner Area (Ft²)	'	89908		89908		113430	113430	68660	57499	57499	57499	0.070	
Liner Thickness (Mil)		30		180		180	30	180	30	30	30	Ō	
Liner Thickness (Inches)		0 0300		0.1800		0.1800	0.0300	0 1800	0.0300	0.0300	0 0300	0	
Liner Thickness (Ft)		0.0025		0.0150		0.0150	0.0025	0.0150	0.0025	0.0025	0.0025	0	
"Swell" Factor		25.0%		25.0%		25.0%	25 0%	25.0%	25.0%	25.0%	25.0%	0.0%	
Liner Volume (Ft)		281		1686		2127	354	1287	180	180	180	0	
Truck Loads of Liner Liner Handling Cost (\$)	-	_0.5_		3.1		3.9	0.7	2.4	0.3	0.3	0.3	0.0	
Labor Crew Cost per Hour (\$)		\$171		\$171		\$171	\$171	\$171	\$171	\$171	\$171	\$0	
Hours per Load		2.0		20		2.0	2.0	2.0	2.0	2.0	2.0	0.0	
Liner Handling Cost Per Load (\$)		\$342.96	]	\$342.96		\$342.96	\$342.96	\$342.96	\$342.96	\$342.96	\$342.96	\$0.00	
Total Liner Handling Cost (\$)	\$0	\$171	\$0	\$1,063	\$0	\$1,338	\$240	\$823	\$103	\$103	\$103	\$0	
Transportation & Disposal													
Percent To Be Shipped to Licensed Site		100.0%		100.0%		100.0%	100.0%	100 0%	100 0%	100.0%	100.0%	100.0%	
Transportation Cost per Truckload		\$2,100		\$2,100		\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	
Transportation Cost (\$) Disposal Cost Per Cubic Foot (\$)		\$1,050 \$11.00		\$6,510 \$11 00		\$8,190 \$11.00	\$1,470 \$11.00	\$5,040 \$11.00	\$630 \$11.00	\$630 \$11.00	\$630 \$11.00	\$0 \$11.00	
Quantity Per Truck Load (Ft³)		540		540		540	511.00	540	540	540	540		
Disposal Cost (\$)	l	\$2,970		\$18,414		\$23,166	\$4,158	\$14,256	\$1,782	\$1,782	\$1,782	\$0	
Total Transportation & Disposal (\$)	\$0	\$4,020	\$0	\$24.924	\$0	\$31,356	\$5,628	\$19,296	\$2,412	\$2,412	\$2,412	\$0	
TOTAL LINER COST (\$)	\$0	\$4,191	\$0	\$25,987	\$0	\$32,694	\$5,868	\$20,119	\$2,515	\$2,515	\$2,515	\$0	\$96,404
POND BACKFILL.	'												
Backfill required (Yds³)	8740	8580	8740	8580	2517	14617	16319	9048	9048	9048	9048	18070	
Backfill Cost (\$\text{\$\tau}\d^2) TOTAL BACKFILL COST (\$)	\$1 08 \$9 474	\$1.08 \$9,301	\$1.08 \$9,474	\$1.08 \$9,301	\$1.08 \$2,728	\$1.08 \$15,845	\$1.08 \$17,690	\$1.08 \$9,808	\$1.08 \$9,808	\$1.08 \$9,808	\$1.08 \$9,808	\$1.08 \$19,588	\$132,633
TOTAL BACKPILL COST (\$)	\$9,474	39,301	<u> </u>	\$9,301	\$2,720	\$15,045	\$17,030	\$9,000	\$3,000	48,000	43,000	319,300	_ \$1,32,033
RADIATION SURVEY	· -												
Areal required (acres)	0.00	1.72	0.00	172		2 90	2.17	1.10	1.10	1.10	1.10	0	
Survey Cost (\$/acre)	\$520.00	\$520.00	\$520.00	\$520.00	\$520.00	\$520 00	\$520 00	\$520.00	\$520.00	\$520.00	\$520 00	\$520.00	
TOTAL SURVEY COST (\$)	\$0	\$894	\$0	\$894	\$0_	\$1,508	\$1,128	\$572	\$572	\$572	<u>\$572</u>	\$0	\$6,712
SAM DETECTION OVERTEN DEMONAL	1												
Volume of Gravel and Piping (Ft³) (Assume 3")						I		5,250	. 5,250			_	II.
Quantity per Truckload (Ft³)								540	540			i	
Quantity to be Shipped to Licensed Site (Loads)								10	10			ļ	
Transportation Cost per Truckload								\$2,100	\$2,100				
Transportation Cost (\$)				· '		l		\$20,000	\$20,000				
Total Handling Cost per load								\$3,334	\$3,334				
Disposal Fee per Cubic Foot (\$)								. "\$11	/· \$11		1		
Disposal Cost (\$)	ļ.,							\$57,750	\$57,750				2400 405
TOTAL LEAK DETECTION SYSTEM REMOVAL	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$81,084	\$81,084	\$0	\$0	\$0	\$162,169
TOTAL POND RECLAMATION COST	\$0.474	\$136,102	\$0.474	\$157,898	\$2.728	\$204,055	\$178.604	\$164 575	\$165 187	\$58,435	\$34,423	\$10 588	\$1,140,634
TO LOUIS TO THE RECENTATION COST	93,4/4	¥130,102	ψ3,4/4	1_#101,080	₽Z,120	ΨZU-1,033	3,170,084	- 10-,5/5	, <del>+</del> 100, 107	. 200,700	<u> </u>	910,000	4.,170,034

### SUMMARY - IRIGARAY:

TOTAL SLUDGE COST (\$) \$551.448 |
TOTAL LINER COST (\$) \$68,740 |
TOTAL BACKFILL COST (\$) \$73.81 |
TOTAL RADIATION SURVEY COST (\$) \$4.424 |
LEAK DETECTION SYSTEM REMOVAL 50 \$5.0 |
TOTAL POND RECLAMATION COST \$689,425

### SUMMARY - CHRISTENSEN.

TOTAL SLUDGE COST (\$) 5191,268
TOTAL LINER COST (\$) 527,664
TOTAL BACKFILL COST (\$) 558,820
TOTAL RADIATION SURVEY COST (\$) 52,288
LEAK DETECTION SYSTEM REMOVAL
TOTAL PROJECT COST - CR and IR (\$) 51,140,634

								_						
		Irigaray			Christensen									
	Mine Units	517 USMT	Monitor/					Mine Units						
WELL PLUGGING AND ABANDONMENT	#1 Thru #9	Test Sites	Trend	Sub Total	#2	#3	#4	#5	#6	#7	#8	#10	#11	Sub Total
												······································		
Number of Wells	0	11		11,										
Production / Injection Wells (Inclusive of									1 '					1 1
Misc. Baseline / Regional Wells)					286	443	211	322	380	556	780	734	6	
Monitor Wells (Shallow, Deep, Perimeter)					50	47	33	72	64	66	76	72	44	
Total	ļ				336	490	244	394	444	622	856	806	50	
Average Depth	250	250	250		345	300	430	450	520	550	375	500	500	
Average Diameter	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Materials		<del></del>					-		·					
Bentonite Chips Required (Ft³/Well)	11.4	11.4	11.4		11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4	1
Bags of Chips Required (PC/Well)	15.0	15.0	15.0		15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	1 1
Cost Per Bag (\$)	\$5.20	\$5.20	\$5.20		\$5.20	\$5.20	\$5.20	\$5.20	\$5.20	\$5.20	\$5.20	\$5.20	\$5.20	1 1
Cost/Well Bentonite Chips (\$)	\$78.00	\$78.00	\$78.00		\$78.00	\$78.00	\$78.00	\$78.00	\$78.00	\$78.00	\$78.00	\$78.00	\$78.00	
Gravel Fill Required (Ft³/Well)	15.7	15.7	15.7		26.5	21.5	35.9	38.1	45.8	49.1	24.9	25.9	26.9	
Gravel Fill Required (Yd³/Well)	0.58	0.58	0.58		0.98	0.80	1.33	1.41	1.70	1.82	0.92	0.96	1.00	J
Cost of Gravel/Yd³ (\$)	\$20.00	\$20.00	\$20.00		\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00	\$21.00	\$22.00	1 1
Cost/Well Gravel Fill (\$)	\$11.63	\$11.63	\$11.63		\$20.00 \$19.63	\$20.00 \$15.93	\$26.59	\$28.22	\$33.93	\$36.37	\$18.44	\$20.14	\$22.00	í I
	1.0	1.03	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	3.0	í l
Cement Cone/Markers Req'd/Well						\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	2.0 \$10.00	\$10.00	1 1
Cost of Cement Cones/Markers (\$)	\$10.00	\$10.00	\$10.00		\$10.00									1 1
Total Materials Cost per Well	\$99.63	\$99.63	\$99.63		\$107.63	\$103.93	\$114.59	\$116.22	\$121.93	\$124.37	\$106.44	\$108.14	\$109.92	<del> </del>
Labor	4.0		1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	3.0	1
Hours Required per Well	1.0	1.0 \$55.70	\$55.70		\$55.70	\$55.70	\$55.70	\$55.70	\$55.70	\$55.70	\$55.70	\$55.70	\$55.70	1 1
Labor Cost per Hour Total Labor Cost per Well (\$)	\$55.70 \$55.70	\$55.70 \$55.70	\$55.70 \$55.70		\$55.70 \$55.70	\$55.70 \$55.70	\$55.70 \$55.70	\$55.70 \$55.70	\$55.70	\$55.70	\$55.70 \$55.70	\$111.40	\$167.10	1 1
Equipment Rental	\$55.70	\$55.70	\$55.70		\$55.70	\$55.70	\$35.70	\$35.70	\$33.70	<u>\$35.70</u>	\$55.70	<u>\$111.40</u>	\$167.10	<b></b>
	4.0	4.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	i I
Hours Required per Well	1.0	1.0												4 I
Backhoe w/Operator Cost/Hr (\$)	\$61.21 \$61.21	\$61.21 \$61.21	\$61.21 \$61.21		\$61.21 \$61.21	\$61.21 \$61.21	\$61.21 \$61.21	\$61.21 \$61.21	\$61.21 \$61.21	\$61.21 \$61.21	\$61.21 \$61.21	\$61.21 \$61.21	\$61.21 \$61.21	1
Total Equipment Cost per Well (\$)	\$216.54	\$216.54	\$216.54		\$224.54	\$220.84	\$231.50	\$233.13	\$238.84	\$241.28	\$223.35	\$280.75	\$338.23	
Total Cost per Well (\$)	⊅216.54	<b>φ216.54</b>	<b>⊅</b> 210.54		<b>⊅∠∠4.54</b>	⊅∠∠∪.84	<b>⊅∠31.5</b> 0	⊕∠3 <u>3, 13</u>	⊕∠30.04	\$72,485	\$∠∠3.33	<b>⊅∠</b> 60.75	\$33 <u>8.23</u>	
TOTAL WELL ABANDONMENT COST (\$)	\$0	\$2,382	\$0	\$2.382	\$75,445	\$108,210	\$56,487	\$91.854	\$106,043	\$150,076	\$191,191	\$226,288	\$16,911	\$1,022,506
		<u> </u>		+-,-JL	7. 5,0		<del></del>		, , , . , . , . ,			,,,,0		

GRAND TOTAL IRIGARAY AND CHRISTENSEN

	Irigaray	Christensen	Christensen	Christensen	Christensen		Christensen	Christensen	Total
WELLFIELD EQUIPMENT REMOVAL & DISPOSAL	Mine Unit(s) #1 Thru #9	Mine Units #2 Thru #4	Mine Unit #5	Mine Unit #6	Mine Unit #7	Mine Unit #8	Mine Unit #10	Mine Unit #11	Christensen & Irigaray
I Wellfield Piping	٦								
A. Removal							-		
Length/Well (Ft)	100	300	300	300	500	800	800	800	
Total Number of Wells	602	940	322	380	556	780	734	. 6	
Total Quantity (Ft)	60200	282000	96600	114000	278000	624000	587200	4800	
Cost of Removal (\$/Ft)	\$0.202	\$0.202	\$0.202	\$0.202	\$0.202	\$0.202	\$0.202	\$0.202	
Cost of Removal (\$)	\$12,160	\$56,964	\$19,513	\$23,028	\$56,156	\$126,048	\$118,614	\$970	\$413,454
Average OD (Inches)	3.0	3.0	3.0	3.0	1.0	1.0	1.0	1.0	
Chipped Volume Reduction (Ft*/Ft)	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
Chipped Volume (Ft³)	963 540	4,512 540	1,546 540	1,824 540	4,448 540	9,984 540	9,395 540	77 540	
Quantity Per Truck Load (Ft³) Total Number of Truck Loads	1.8	84	2.9	3.4	8.2	18.5	17.4	0.1	
B. Survey & Decontamination	1.0	04_	2.9	3.4_	0.2	10.5	17.4	-9.1	
B. Survey & Decontamination						{			
Percent Requiring Decontamination	0%	0%	0%	0%	0%	0%	0%	0%	
Loads for Decontamination	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Cost for Decontamination (\$/Load)	\$435.00	\$435.00	\$435.00	\$435.00	\$435.00	\$435.00	\$435.00	\$435.00	
Cost for Decontamination (\$)	\$0	\$0	\$0	\$0	\$0	\$0_	\$0	\$0	\$0
C. Transport & Disposal							ł		ŀ
1.) Landfill	1	1			]	I	1	İ	
a. Transportation	1		0.004	0.00					1
Percent To Be Shipped	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Loads To Be Shipped	\$1,170	\$1,170	\$1,170	\$1,170	\$1,170	\$1,170	\$1,170	\$1,170	
Transportation Cost per Load	\$1,170	\$1,170	\$1,170	\$1,170	\$1,170	\$1,170	\$1,170	\$1,170	\$0
Transportation Cost (\$) b. Disposal	) \$U	30	<b>\$</b> U	30	30	30	] 30	30	20
Disposal Fee Per Yd <sup>3</sup>	\$58.50	\$58.50	\$58.50	\$58.50	\$58.50	\$58.50	\$58.50	\$58.50	
Yds² Per Load	20	20	20	20	20	20	20	20	
Disposal Cost (\$)	\$0	so so	\$0	\$0	\$0	l so	\$0	\$0	
Total Cost - Landfill	so	so so	so	\$0	so so	l so	so.	so	so
2.) Licensed Site		**	• • • • • • • • • • • • • • • • • • • •	•	1				-
a. Transportation							ł	ł	ľ
Percent To Be Shipped	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	}
Loads To Be Shipped	1.8	8.4	2.9	3.4	8.2	18.5	17.4	0.1	
Transportation Cost per Load	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	
Transportation Cost (\$)	\$3,780	\$17,640	\$6,090	\$7,140	\$17,220	\$38,850	\$36,540	\$210	\$127,470
b. Disposal									
Disposal Cost Per Ft <sup>3</sup>	\$11.00	\$11.00	\$11.00	\$11.00	\$11.00	\$11.00	\$11.00	\$11.00	
Disposal Fee Per Yd³	\$297.00	\$297.00	\$297.00	\$297.00	\$297.00	\$297.00	\$297.00	\$297.00	
Quantity Per Truck Load (Yds³)	20	20	20	20	20	20	20	20	
Disposal Cost (\$)	\$10,692	\$49,896	\$17,226	\$20,196	\$48,708	\$109,890	\$103,356	\$594	\$360,558
Total Cost - Licensed Site	\$14,472	\$67,536	\$23,316	\$27,336	\$65,928	\$148,740	\$139,896	\$804	\$488,028
Total Cost - Transport & Disposal	\$14,472	\$67,536	\$23,316	\$27,336	\$65,928	\$148,740	\$139,896	\$804	\$488,028
Total Cost - WF Piping Removal & Disposal     Production Well Pumps	\$26,632	\$124,500	\$42,829	\$50,364	\$122,084	\$274,788	\$258,510	\$1,774	\$901,482
A. Pump and Tubing Removal	<del> </del>	l				Γ			
Number of Production Wells	۰ ا	348	134	178	167	264	261	6	
Cost of Removal (\$/well)	\$66.81	\$66.81	\$66.81	\$66.81	\$66.81	\$66.81	\$66.81	\$66.81	
Cost of Removal (\$)	\$0	\$23,248	\$8,952	\$11,891	\$11,156	\$17,637	\$17,436	\$401	\$90,721
Number of Pumps Per Truck Load	180	180	180	180	180	180	180	180	
Number of Truck Loads (Pumps)	0.0	1.9	0.7	1.0	0.9	1.5	1.5	0.0	
B. Survey & Decontamination (Pumps)									
Percent Requiring Decontamination	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	i
Loads for Decontamination	0.0	1.0	0.4	0.5	0.5	0.8	0.8	0.0	1
Cost for Decontamination (\$/Load)	\$435.00	\$435.00	\$435.00	\$435.00	\$435.00	\$435.00	\$435.00	\$435.00	J
Cost for Decontamination (\$/Load)  Cost for Decontamination (\$)	\$435.00	\$435.00	\$174	\$435.00	\$218	\$348	\$348	\$435.00	\$1,740
C. Tubing Volume Reduction & Loading	- 30	<b>₽</b> -133	<u> </u>	Ψ <u>2,10</u>	¥2,18	\$5,6	45-0	1	4.5,40
Length per Well (Ft)	100	300	300	450	500	230	500	500	
Total Quantity (Ft)	100	104,400	40,200	80,100	83,500	60,720	130.500	3.000	
Cost of Removal (\$/Ft)	\$0.025	\$0.025	\$0.025	\$0.025	\$0.025	\$0.025	\$0.025	\$0.025	
Cost of Removal (\$)	\$0.020	\$2.610	\$1,005	\$2,003	\$2,088	\$1,518	\$3,263	\$75	\$12,561
Average OD (Inches)	3.0	3.0	3.0	3.0	1.0	1.0	1.0	1.0	
Chipped Volume Reduction (Ft³/Ft)	0,016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
Chipped Volume (Ft³)	0.01.0	1,670		1,282	1,336		2,088	48	

		Irigaray	Christensen	Christensen	Christensen	Christensen	Christensen	Christensen	Christensen	Total
	FOURDMENT DEMONAL & DIODOGAL	Mine Unit(s)	Mine Units	Mine Unit #5	Mine Unit #6	Mine Unit #7	Mine Unit #8	Mine Unit #10	Mine Unit #11	Christense & Irigaray
	EQUIPMENT REMOVAL & DISPOSAL	#1 Thru #9	#2 Thru #4 540	540	540	540	540	540	540	a iligara
	antity per Truckload (Ft³) mber of Truck Loads	0.0	3.1	1.2	2.4	2.5	1.8	3.9	0.1	
	ensport & Disposal	0.0	3.1	1.2	2.7_	2.5	1.0	3.3	<u>V.</u>	
	) Landfill									
1.)	a. Transportation									
		50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	
	Percent To Be Shipped (Pumps)				0.5	0.5	0.8	0.8	0.0	
	Loads To Be Shipped	0.0	1.0	0.4		\$1,170	\$1,170	\$1,170	\$1,170	
	Transportation Cost per Load	\$1,170	\$1,170	\$1,170 \$468	\$1,170 \$585	\$585	\$936	\$936	\$1,170	\$4.6
	Transportation Cost (\$)	\$0	\$1,170	\$408	\$363	3303	2930	2930	30	\$4,0
	b. Disposal				450.50	450 50	***	450.50		
	Disposal Fee Per Yd³	\$58.50	\$58.50	\$58.50	\$58.50	\$58.50	\$58.50	\$58.50	\$58.50	
	Yds³ Per Load	20	20	20	20	20	20		20	
	Disposal Cost (\$)	\$0	\$1,170	\$468	\$585	\$585	\$936	\$936	\$0	\$4,6
	Total Cost - Landfill	\$0	\$2,340	\$936	\$1,170	\$1,170	\$1,872	\$1,872	\$0	\$9,3
2.)	Licensed Site								ŀ	
	a. Transportation									
	Percent To Be Shipped (Pumps)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	
	Percent To Be Shipped (Tubing)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
	Loads To Be Shipped	0.0	4.0	1.5	2.9	2.9	2.5	4.6	0.1	
	Transportation Cost per Load	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	
	Transportation Cost (\$)	\$0	\$8,491	\$3,236	\$6,034	\$6,141	\$5,353	\$9,695	\$187	\$39,1
	b. Disposal	""	\$0,401	45,250	40,004	40,141	ψ5,000	Ψ0,000	1 4107	400,1
	Disposal Cost Per Ft <sup>3</sup>	\$11.00	\$11.00	\$11.00	\$11.00	\$11.00	\$11.00	\$11.00	\$11.00	
	Disposal Fee Per Yd³	\$297.00	\$297.00	\$297.00	\$297.00	\$297.00	\$297.00	\$297.00	\$297.00	
		\$297.00	\$297.00	20	20	20	20	20	20	
	Quantity Per Truck Load (Yds³)					\$17.369		\$27,423		\$110.7
	Disposal Cost (\$)	\$0	\$24,017	\$9,154	\$17,068		\$15,142		\$528	
	Total Cost - Licensed Site	\$0	\$32,508	\$12,391	\$23,102	\$23,510	\$20,495	\$37,118	\$715	\$149,8
	tal Cost - Transport & Disposal	\$0	\$34,848	\$13,327	\$24,272	\$24,680	\$22,367	\$38,990	\$715	\$159,1
	ost - Pump Removal & Disposal	\$0	\$61,142	\$23,457	\$38,383	\$38,141	\$41,869	\$60,037	\$1,190	\$264,2
	Trunkline Piping	ļ <u>.</u>								
A. Rei		1 _		_	_	١ .	١ .		1 .	
	tal Quantity (Ft)	0	0	0	0	0	0	0	0	
	st of Removal (\$/Ft)	\$0.146	\$0.146	\$0.146	\$0.146	\$0.146	\$0.146	\$0.146	\$0.146	
	st of Removal (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Ave	erage OD (Inches)	8.750	8.750	0.000	0.000	0.000	0.000	0.000	0.000	
Chi	ipped Volume Reduction (Ft³/Ft)	0.088	0.088	0.088	0.088	0.088	0.088	0.088	0.088	
Chi	ipped Volume (Ft <sup>a</sup> )	0	0	0	0	[ 0	( 0	0	[ 0[	
					F 40	540	540			
Qu	antity Per Truck Load (Ft³)	540	540	540	540				540	
		540 0.0	540 0.0	540 0.0	0.0	0.0	0.0	540 0.0_	540 0.0	
Tot	antity Per Truck Load (Ft³)									
Tot	antity Per Truck Load (Ft³) tal Number of Truck Loads					0.0				
B. Sur	antity Per Truck Load (Ft³) tal Number of Truck Loads rvey & Decontamination									
B. Sur Per	antity Per Truck Load (Ft³) tal Number of Truck Loads rvey & Decontamination rcent Requiring Decontamination	0.0%	0.0%	0.0	0.0	0.0	0.0	0.0	0.0	
B. Sur Per Los	antity Per Truck Load (FI*) lal Number of Truck Loads rvey & Decontamination rcent Requiring Decontamination ads for Decontamination	0.0% 0.0% 0.0	0.0	0.0%	0.0%	0.0	0.0%	0.0	0.0%	
B. Sur Per Los Cos	antity Per Truck Load (FI³) lal Number of Truck Loads rvey & Decontamination rcent Requiring Decontamination ads for Decontamination st for Decontamination (\$/Load)	0.0% 0.0% 0.0 \$435.00	0.0% 0.0% 0.0 \$435.00	0.0% 0.0% 0.0 \$435.00	0.0% 0.0 \$435.00	0.0 0.0% 0.0	0.0% 0.0% 0.0 \$435.00	0.0 0.0% 0.0	0.0% 0.0 \$435.00	
B. Sur Per Los Cos	antity Per Truck Load (FI³) tal Number of Truck Loads rvey & Decontamination rcent Requiring Decontamination ads for Decontamination st for Decontamination (\$/Load) st for Decontamination (\$/Load)	0.0% 0.0% 0.0	0.0 0.0% 0.0	0.0 0.0% 0.0	0.0 0.0% 0.0	0.0% 0.0% \$435.00	0.0% 0.0%	0.0 0.0% 0.0 \$435.00	0.0% 0.0%	
B. Sur Per Los Co: Co:	antity Per Truck Load (FI*) lal Number of Truck Loads rvey & Decontamination rcent Requiring Decontamination ads for Decontamination st for Decontamination (\$/Load) st for Decontamination (\$) ansport & Disposal	0.0% 0.0% 0.0 \$435.00	0.0% 0.0% 0.0 \$435.00	0.0% 0.0% 0.0 \$435.00	0.0% 0.0 \$435.00	0.0% 0.0% \$435.00	0.0% 0.0% 0.0 \$435.00	0.0 0.0% 0.0 \$435.00	0.0% 0.0 \$435.00	
B. Sur Per Los Co: Co:	antity Per Truck Load (FI³) tal Number of Truck Loads rrey & Decontamination reent Requiring Decontamination ads for Decontamination st for Decontamination (\$/Load) st for Decontamination (\$) ansport & Disposal	0.0% 0.0% 0.0 \$435.00	0.0% 0.0% 0.0 \$435.00	0.0% 0.0% 0.0 \$435.00	0.0% 0.0 \$435.00	0.0% 0.0% \$435.00	0.0% 0.0% 0.0 \$435.00	0.0 0.0% 0.0 \$435.00	0.0% 0.0 \$435.00	
Per Los Co: Co:	antity Per Truck Load (FI*) tall Number of Truck Loads rvey & Decontamination rcent Requiring Decontamination ads for Decontamination st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) ansport & Disposal ) Landfill a. Transportation	0.0 0.0% 0.0 \$435.00 \$0	0.0% 0.0% 0.0 \$435.00 \$0	0.0% 0.0 \$435.00 \$0	0.0% 0.0 \$435.00 \$0	0.0% 0.0 \$435.00 \$0	0.0% 0.0 \$435.00 \$0	0.0% 0.0 \$435.00 \$0	0.0% 0.0% 0.0 \$435.00 \$0	
Per Los Co: Co:	antity Per Truck Load (FI*) lat Number of Truck Loads rvey & Decontamination rcent Requiring Decontamination ads for Decontamination st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$) ansport & Disposal ) Landfill a. Transportation Percent To Be Shipped	0.0 0.0% 0.0 \$435.00 \$0	0.0% 0.0% \$435.00 \$0	0.0 0.0% 0.0 \$435.00 \$0	0.0 0.0 0.0 \$435.00 \$0	0.0% 0.0 \$435.00 \$0.0%	0.0% 0.0% 0.0 \$435.00 \$0	0.0 0.0% 0.0 \$435.00 \$0	0.0% 0.0 \$435.00 \$0	
B. Sur Per Los Co: Co:	antity Per Truck Load (FI*) tal Number of Truck Loads rvey & Decontamination rcent Requiring Decontamination ads for Decontamination st for Decontamination (\$/Load) st for Decontamination (\$) ansport & Disposal ) Landfill a. Transportation Percent To Be Shipped Loads To Be Shipped	0.0% 0.0% \$435.00 \$0.0% 0.0%	0.0 0.0% 0.0 \$435.00 \$0	0.0 0.0 0.0 \$435.00 \$0 0.0%	0.0 0.0% 0.0 \$435.00 \$0	0.0 0.0% 0.0 \$435.00 \$0.0%	0.0 0.0 0.0 \$435.00 \$0	0.0 0.0% 0.0 \$435.00 \$0	0.0 0.0% 0.0 \$435.00 \$0	
Per Los Co: Co:	iantity Per Truck Load (FI*) tall Number of Truck Loads rvey & Decontamination rcent Requiring Decontamination ads for Decontamination st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$) ansport & Disposal ) Landfill a. Transportation Percent To Be Shipped Loads To Be Shipped Transportation Cost per Load	0.0 0.0% 0.0 \$435.00 \$0 0.0%	0.0 0.0% 0.0 \$435.00 \$0 0.0% 0.0 \$1,170	0.0 0.0% 0.0 \$435.00 \$0 0.0% 0.0 \$1,170	0.0 0.0% 0.0 \$435.00 \$0 0.0%	0.0 0.0% 0.0 \$435.00 \$0.0% 0.0%	0.0% 0.0 \$435.00 \$0.0 0.0%	0.0 0.0% 0.0 \$435.00 \$0.0% 0.0%	0.0% 0.0 \$435.00 \$0.0 0.0% 0.0 \$1,170	
B. Sur Per Los Co: Co:	antity Per Truck Load (FI*) lat Number of Truck Loads rvey & Decontamination rcent Requiring Decontamination at for Decontamination st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination Transport Belling a. Transportation Percent To Bellinged Loads To Bellinged Transportation Cost per Load Transportation Cost (\$)	0.0% 0.0% \$435.00 \$0.0% 0.0%	0.0 0.0% 0.0 \$435.00 \$0	0.0 0.0 0.0 \$435.00 \$0 0.0%	0.0 0.0% 0.0 \$435.00 \$0	0.0 0.0% 0.0 \$435.00 \$0.0%	0.0 0.0 0.0 \$435.00 \$0	0.0 0.0% 0.0 \$435.00 \$0	0.0 0.0% 0.0 \$435.00 \$0	
B. Sur Per Los Co: Co:	antity Per Truck Load (FI³) tal Number of Truck Loads rvey & Decontamination rcent Requiring Decontamination ads for Decontamination st for Decontamination (\$/Load) st for Decontamination (\$/ansport & Disposal ) Landfill a. Transportation Percent To Be Shipped Loads To Be Shipped Transportation Cost per Load Transportation Cost (\$) b. Disposal	0.0 0.0% 0.0 \$435.00 \$0 0.0% 0.0 \$1,170	0.0 0.0% 0.0 \$435.00 \$0 0.0% 0.0 \$1,170	0.0 0.0% 0.0 \$435.00 \$0 0.0% 0.0 \$1,170	0.0% 0.0% 0.0 \$435.00 \$0 0.0% 0.0 \$1,170	0.0% 0.0 \$435.00 \$0.0 \$0.0 \$0.0 \$0.0 \$0.0 \$0.0 \$0.0 \$	0.0% 0.0 \$435.00 \$0.0 \$0.0 \$0.0 \$0.0 \$0.0 \$0.0 \$0.0 \$	0.0 0.0% 0.0 \$435.00 \$0 0.0% 0.0 \$1,170	0.0% 0.0 \$435.00 \$0.0 \$0.0 \$0.0% 0.0 \$1,170 \$0	
B. Sur Per Los Co: Co:	antity Per Truck Load (FI*)  Ial Number of Truck Loads  revey & Decontamination  recent Requiring Decontamination  als for Decontamination  st for Decontamination (\$/Load)  st for Decontamination (\$/Load)  st for Decontamination (\$)  ansport & Disposal  ) Landfill  a. Transportation  Percent To Be Shipped  Loads To Be Shipped  Loads To Be Shipped  Transportation Cost per Load  Transportation Cost (\$)  b. Disposal  Disposal	0.0% 0.0% 0.0 \$435.00 \$0 0.0% 0.0 \$1,170 \$0	0.0% 0.0 \$435.00 \$0.0 \$0.0% 0.0 \$1,170 \$0	0.0 0.0% 0.0 \$435.00 \$0 0.0% 0.0 \$1,170 \$0	0.0% 0.0 \$435.00 \$0.0% 0.0% \$1,170 \$0	0.0% 0.0 \$435.00 \$0.0 \$0.0 \$0.0 \$0.0 \$1,170 \$0.0 \$1,170 \$0.0 \$1,170 \$0.0 \$1,170 \$0.0 \$1,170 \$0.0 \$1,170 \$0.0 \$1,170 \$0.0 \$1,170	0.0% 0.0 \$435.00 \$0.0 \$0.0 \$0.0 \$0.0 \$1,170 \$0.0 \$58.50	0.0% 0.0 \$435.00 \$0.0 \$0.0 \$0.0 \$0.0 \$1,170 \$0.0 \$158.50	0.0% 0.0 \$435.00 \$0.0 \$0.0 \$0.0 \$1,170 \$0.0 \$58.50	
B. Sur Per Los Co: Co:	antity Per Truck Load (FI³) lati Number of Truck Loads rvey & Decontamination rcent Requiring Decontamination ads for Decontamination st for Decontamination (\$i*Load) st for Decontamination (\$i*Load) st for Decontamination (\$i*Load) st for Decontamination (\$i*Load) st for Decontamination (\$i*Load) st for Decontamination (\$i*Load) st for Decontamination (\$i*Load) 1 Transportation Percent To Be Shipped Loads To Be Shipped Loads To Be Shipped Transportation Cost per Load Transportation Cost (\$) b. Disposal Disposal Disposal Fee Per Yd³ Yds³ Per Load	0.0 0.0% 0.0 \$435.00 0.0 \$1,170 \$0 \$58.50	0.0% 0.0% 0.0% 9.05.00 \$435.00 0.0% 0.0 \$1,170 \$0 \$58.50	0.0% 0.00 \$435.00 0.00 0.00 0.00 \$1.170 \$0	0.0% 0.00 \$435.00 \$0.0 \$0.0% 0.0% \$1,170 \$0	0.0% 0.0% \$435.00 0.0% 0.0 \$1,170 \$0 \$58.50	0.0% 0.0% \$435.00 \$0.0% 0.0 \$1,170 \$0 \$58.50	0.0% 0.0 \$435.00 \$0.0 \$0.0 0.0 \$1,170 \$0 \$58.50	0.0% 0.0 \$435.00 \$0.0 \$1,170 \$0.0 \$58.50	
B. Sur Per Los Co: Co:	antity Per Truck Load (Ft³) tal Number of Truck Loads rvey & Decontamination rcent Requiring Decontamination ads for Decontamination st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$) ansport & Disposal ) Landfill a. Transportation Percent To Be Shipped Loads To Be Shipped Transportation Cost per Load Transportation Cost (\$) b. Disposal Disposal Fee Per Yd³ Yds³ Per Load Disposal Cost (\$)	0.0 0.0% 0.0 \$435.00 \$0 0.0% 0.0 \$1,170 \$0 \$58.50 20	0.0% 0.0% \$435.00 \$0 0.0% 0.0 \$1,170 \$0 \$58.50 20	0.0% 0.0 \$435.00 \$0.0 \$0.0 \$0.0 \$0.0 \$1,170 \$0.0 \$58.50 20 \$0.0 \$0.0	0.0% 0.00 \$435.00 \$0.00 0.00 \$1,170 \$0 \$58.50 20	0.0 0.0% 0.0 \$435.00 0.0% 0.0 \$1,170 \$0 \$58.50 20	0.0% 0.0% 0.0 \$435.00 \$0.0 0.0 \$1,170 \$0 \$58.50 20	0.0% 0.00% 0.00 \$435.00 \$0.00% 0.00 \$1,170 \$0 \$58.50 20 \$0	0.0% 0.0 \$435.00 \$0.0 0.0 \$1,170 \$0 \$58.50 \$0	
Per Los Co: Co: Co: Tra 1.)	antity Per Truck Load (FI³) tal Number of Truck Loads rvey & Decontamination recent Requiring Decontamination ads for Decontamination st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) ansport & Disposal Landfill a. Transportation Percent To Be Shipped Loads To Be Shipped Loads To Be Shipped Transportation Cost per Load Transportation Cost (\$) b. Disposal Disposal Fee Per Yd³ Yds³ Per Load Disposal Fee Per Yd³ Yds³ Per Load Disposal Cost (\$) Total Cost - Landfill	0.0 0.0% 0.0 \$435.00 0.0 \$1,170 \$0 \$58.50	0.0% 0.0% 0.0% 9.05.00 \$435.00 0.0% 0.0 \$1,170 \$0 \$58.50	0.0% 0.00 \$435.00 0.00 0.00 0.00 \$1.170 \$0	0.0% 0.00 \$435.00 \$0.0 \$0.0% 0.0% \$1,170 \$0	0.0% 0.0% \$435.00 0.0% 0.0 \$1,170 \$0 \$58.50	0.0% 0.0% \$435.00 \$0.0% 0.0 \$1,170 \$0 \$58.50	0.0% 0.0 \$435.00 \$0.0 \$0.0 \$1,170 \$0 \$58.50	0.0% 0.0 \$435.00 \$0.0 \$1,170 \$0.0 \$58.50	
Per Los Co: Co: Co: Tra 1.)	antity Per Truck Load (Ft³) tal Number of Truck Loads rvey & Decontamination rcent Requiring Decontamination ads for Decontamination st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$) ansport & Disposal ) Landfill a. Transportation Percent To Be Shipped Loads To Be Shipped Transportation Cost per Load Transportation Cost (\$) b. Disposal Disposal Fee Per Yd³ Yds³ Per Load Disposal Cost (\$)	0.0 0.0% 0.0 \$435.00 \$0 0.0% 0.0 \$1,170 \$0 \$58.50 20	0.0% 0.0% \$435.00 \$0 0.0% 0.0 \$1,170 \$0 \$58.50 20	0.0% 0.0 \$435.00 \$0.0 \$0.0 \$0.0 \$0.0 \$1,170 \$0.0 \$58.50 20 \$0.0 \$0.0	0.0% 0.00 \$435.00 \$0.00 0.00 \$1,170 \$0 \$58.50 20	0.0 0.0% 0.0 \$435.00 0.0% 0.0 \$1,170 \$0 \$58.50 20	0.0% 0.0% 0.0 \$435.00 \$0.0 0.0 \$1,170 \$0 \$58.50 20	0.0% 0.00% 0.00 \$435.00 \$0.00% 0.00 \$1,170 \$0 \$58.50 20 \$0	0.0% 0.0 \$435.00 \$0.0 0.0 \$1,170 \$0 \$58.50 \$0	
Per Los Co: Co: Co: Tra 1.)	antity Per Truck Load (FI³) tal Number of Truck Loads rvey & Decontamination recent Requiring Decontamination ads for Decontamination st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) ansport & Disposal Landfill a. Transportation Percent To Be Shipped Loads To Be Shipped Loads To Be Shipped Transportation Cost per Load Transportation Cost (\$) b. Disposal Disposal Fee Per Yd³ Yds³ Per Load Disposal Fee Per Yd³ Yds³ Per Load Disposal Cost (\$) Total Cost - Landfill	0.0 0.0% 0.0 \$435.00 \$0 0.0% 0.0 \$1,170 \$0 \$58.50 20	0.0% 0.0% \$435.00 \$0 0.0% 0.0 \$1,170 \$0 \$58.50 20	0.0% 0.0 \$435.00 \$0.0 \$0.0 \$0.0 \$0.0 \$1,170 \$0.0 \$58.50 20 \$0.0 \$0.0	0.0% 0.00 \$435.00 \$0.00 0.00 \$1,170 \$0 \$58.50 20	0.0 0.0% 0.0 \$435.00 0.0% 0.0 \$1,170 \$0 \$58.50 20	0.0% 0.0% 0.0 \$435.00 \$0.0 0.0 \$1,170 \$0 \$58.50 20	0.0% 0.00% 0.00 \$435.00 \$0.00% 0.00 \$1,170 \$0 \$58.50 20 \$0	0.0% 0.0 \$435.00 \$0.0 0.0 \$1,170 \$0 \$58.50 \$0	
Per Los Co: Co: Co: Tra 1.)	iantity Per Truck Load (FI*) tala Number of Truck Loads rvey & Decontamination rcent Requiring Decontamination at for Decontamination (\$Load) st for Decontamination (\$Load) st for Decontamination (\$Load) st for Decontamination (\$Load) st for Decontamination (\$Load) st for Decontamination (\$Load) st for Decontamination a. Transportation Percent To Be Shipped Loads To Be Shipped Transportation Cost per Load Transportation Cost (\$) b. Disposal Disposal Fee Per Yd³ Yds³ Per Load Disposal Cost (\$) Total Cost - Landfill ) Licensed Site a. Transportation	0.0 0.0% 0.0 \$435.00 \$0 0.0% 0.0 \$1,170 \$0 \$58.50 20 \$0	0.0% 0.0% \$435.00 \$0 0.0% 0.0 \$1,170 \$0 \$58.50 20	0.0% 0.0 \$435.00 \$0.0 \$0.0 \$0.0 \$0.0 \$1,170 \$0.0 \$58.50 20 \$0.0 \$0.0	0.0% 0.00 \$435.00 \$0.00 0.00 \$1,170 \$0 \$58.50 20	0.0 0.0% 0.0 \$435.00 0.0% 0.0 \$1,170 \$0 \$58.50 20	0.0% 0.0% 0.0 \$435.00 \$0.0 0.0 \$1,170 \$0 \$58.50 20	0.0% 0.00% 0.00 \$435.00 \$0.00% 0.00 \$1,170 \$0 \$58.50 20 \$0	0.0% 0.0 \$435.00 \$0.0 0.0 \$1,170 \$0 \$58.50 \$0	
Per Los Co: Co: Co: Tra 1.)	antity Per Truck Load (FI*) tal Number of Truck Loads rvey & Decontamination recent Requiring Decontamination ads for Decontamination st for Decontamination st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) ansport & Disposal ) Landfill a. Transportation Percent To Be Shipped Loads To Be Shipped Loads To Be Shipped Transportation Cost per Load Transportation Cost (\$) b. Disposal Disposal Cost (\$) Total Cost - Landfill ) Licensed Site a. Transportation Percent To Be Shipped	0.0 0.0% 0.0 \$435.00 \$0 0.0% \$1,170 \$0 \$58.50 20 \$0	0.0 0.0% 0.0 \$435.00 0.0 \$1,170 \$0 \$58.50 20 \$0	0.0 0.0% 0.0 \$435.00 0.0 \$1,170 \$0 \$58.50 \$0	0.0% 0.0 \$435.00 \$0.0% 0.0 \$1,170 \$58.50 \$0 \$0	0.0% 0.0 \$435.00 \$0.0 \$0.0 \$0.0 \$0.0 \$0.0 \$0.0 \$0.0 \$	0.0% 0.0 \$435.00 \$0.0 \$0.0 \$0.0 \$0.0 \$1,170 \$0.0 \$58.50 \$0.0 \$0.0 \$1.00.0%	0.0% 0.0 \$435.00 \$0.0 \$0.0 \$0.0 \$0.0 \$0.0 \$0.0 \$0.0 \$	0.0% 0.0 \$435.00 \$435.00 \$0.0 \$0.0 \$1,170 \$0 \$58.50 \$0 \$0	
Per Los Co: Co: Co: Tra 1.)	antity Per Truck Load (FI*) lal Number of Truck Loads rvey & Decontamination rcent Requiring Decontamination at for Decontamination st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination Percent To Be Shipped Loads To Be Shipped Loads To Be Shipped Transportation Cost (\$) b. Disposal Disposal Fee Per Yd* Yds* Per Load Disposal Fee Per Yd* Yds* Per Load Disposal Cost (\$) Total Cost - Landfill ) Licensed Site a. Transportation Percent To Be Shipped Loads To Be Shipped	0.0 0.0% 0.0 \$435.00 0.0 \$1,170 \$0 \$58.50 \$0 100.0%	0.0% 0.0% \$435.00 \$0.0% 0.0 \$1,170 \$0 \$58.50 20 \$0 \$0	0.0% 0.00 \$435.00 0.0% 0.0 \$1,170 \$0 \$58.50 20 \$0 \$0	0.0% 0.00 \$435.00 \$0.0 0.0% 0.0 \$1,170 \$0 \$58.50 20 \$0 0.0%	0.0% 0.00 \$435.00 \$0.0 \$0.0 \$0.0 \$0.0 \$1,170 \$0 \$58.50 \$0.0 \$0.0 \$1.00.0%	0.0% 0.0 \$435.00 \$0.0 0.0 \$1,170 \$0 \$58.50 \$0 \$0	0.0% 0.0% 0.00 \$435.00 0.0 \$1,170 \$0 \$58.50 \$0 100.0%	0.0% 0.0 \$435.00 \$0.0 \$1,170 \$0 \$58.50 \$0 \$0 0.0%	
Per Los Co: Co: Co: Tra 1.)	antity Per Truck Load (FI*) lat Number of Truck Loads rvey & Decontamination rcent Requiring Decontamination ads for Decontamination st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) necent To Be Shipped Loads To Be Shipped Transportation Cost (\$/Load) Disposal Fee Per Yd* Yds* Per Load Disposal Cost (\$/Load) Total Cost - Landfill Licensed Site a. Transportation Percent To Be Shipped Loads To Be Shipped Loads To Be Shipped Transportation Cost per Load Transportation Cost per Load	0.0 0.0% 0.00 \$435.00 \$0.00 \$1,170 \$0 \$58.50 20 \$0 \$0	0.0% 0.0% 0.0 \$435.00 \$0 0.0% 0.0 \$1,170 \$0 \$58.50 20 \$0 0.0 \$0	0.0% 0.0 \$435.00 \$0.0 \$0.0 \$1,170 \$0.0 \$58.50 20 \$0.0 \$0.0 \$1.00.0%	0.0% 0.00 \$435.00 \$0.00 \$1,170 \$0 \$58.50 20 \$0 \$0 100.0%	0.0% 0.0% 0.0 \$435.00  0.0% 0.0 \$1,170 \$0  \$58.50 20 \$0 0.0 \$1,00.0%	0.0% 0.0% 0.0 \$435.00 \$0.0 \$1,170 \$0 \$58.50 20 \$0 \$0 0.0 \$0	0.0% 0.0 \$435.00 \$0.0 \$0.0 \$1,170 \$0.0 \$58.50 20 \$0.0 \$0.0 \$1.00.0%	0.0% 0.0 \$435.00 \$0.0 0.0 \$1,170 \$0 \$58.50 20 \$0 \$0 0.0 \$0 \$0	
B. Sur Per Los Co: Co: C. Tra 1.)	antity Per Truck Load (FI*) tal Number of Truck Loads rvey & Decontamination reent Requiring Decontamination at for Decontamination st for Decontamination st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Becapitation Percent To Be Shipped Loads To Be Shipped Loads To Be Shipped Transportation Cost per Load Transportation Cost per Load Transportation Cost (\$) b. Disposal Disposal Cost (\$) Total Cost - Landfill ) Licensed Site a. Transportation Percent To Be Shipped Loads To Be Shipped Loads To Be Shipped Transportation Cost per Load Transportation Cost (\$)	0.0 0.0% 0.0 \$435.00 0.0 \$1,170 \$0 \$58.50 \$0 100.0%	0.0% 0.0% \$435.00 \$0.0% 0.0 \$1,170 \$0 \$58.50 20 \$0 \$0	0.0% 0.00 \$435.00 0.0% 0.0 \$1,170 \$0 \$58.50 20 \$0 \$0	0.0% 0.00 \$435.00 \$0.0 0.0% 0.0 \$1,170 \$0 \$58.50 20 \$0 0.0%	0.0% 0.00 \$435.00 \$0.0 \$0.0 \$0.0 \$0.0 \$1,170 \$0 \$58.50 \$0.0 \$0.0 \$1.00.0%	0.0% 0.0 \$435.00 \$0.0 0.0 \$1,170 \$0 \$58.50 \$0 \$0	0.0% 0.0% 0.00 \$435.00 0.0 \$1,170 \$0 \$58.50 \$0 100.0%	0.0% 0.0 \$435.00 \$0.0 \$1,170 \$0 \$58.50 \$0 \$0 0.0%	
Per Los Co: Co: Co: Tra 1.)	antity Per Truck Load (FI*) lai Number of Truck Loads rvey & Decontamination rcent Requiring Decontamination st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) Loads To Be Shipped Loads To Be Shipped Loads To Be Shipped Transportation Cost (\$) b. Disposal Disposal Fee Per Yd* Yds* Per Load Disposal Fee Per Yd* Yds* Per Load Disposal Cost (\$) Total Cost - Landfill ) Licensed Site a. Transportation Percent To Be Shipped Loads To Be Shipped Transportation Cost per Load Transportation Cost per Load Transportation Cost (\$) b. Disposal	0.0 0.0% 0.0 \$435.00 0.0 \$1,170 \$0 \$58.50 \$0 100.0% 0.0 \$2,100 \$0	0.0% 0.00 \$435.00 0.0% 0.0 \$1,170 \$0 \$58.50 20 \$0 \$0 0.0% \$0 \$0	0.0% 0.0 \$435.00 \$0.0 \$0.0 \$0.0 \$0.0 \$1,170 \$0 \$58.50 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	0.0% 0.0% 0.0 \$435.00 \$0.0 0.0% 0.0 \$1,170 \$0 \$58.50 \$0 0.0% \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	0.0% 0.00 \$435.00 \$0.0 \$0.0 \$0.0 \$1,170 \$0 \$58.50 \$0 \$0 \$0 \$0 \$1,000% \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	0.0% 0.0 \$435.00 \$0.0 0.0 \$1,170 \$58.50 \$0 \$0 0.0 \$0 \$0 \$0	0.0% 0.0% 0.0% \$435.00 \$0.0 \$1,170 \$0 \$58.50 \$0 \$0 0.0% \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	0.0% 0.0 \$435.00 \$0.0 \$1,170 \$0 \$58.50 20 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	
B. Sur Per Los Co: Co: C. Tra 1.)	antity Per Truck Load (FI*) tal Number of Truck Loads rvey & Decontamination reent Requiring Decontamination at for Decontamination st for Decontamination st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Decontamination (\$/Load) st for Becapitation Percent To Be Shipped Loads To Be Shipped Loads To Be Shipped Transportation Cost per Load Transportation Cost per Load Transportation Cost (\$) b. Disposal Disposal Cost (\$) Total Cost - Landfill ) Licensed Site a. Transportation Percent To Be Shipped Loads To Be Shipped Loads To Be Shipped Transportation Cost per Load Transportation Cost (\$)	0.0 0.0% 0.00 \$435.00 \$0.00 \$1,170 \$0 \$58.50 20 \$0 \$0	0.0% 0.0% 0.0 \$435.00 \$0 0.0% 0.0 \$1,170 \$0 \$58.50 20 \$0 0.0 \$0	0.0% 0.0 \$435.00 \$0.0 \$0.0 \$1,170 \$0.0 \$58.50 20 \$0.0 \$0.0 \$1.00.0%	0.0% 0.00 \$435.00 \$0.00 \$1,170 \$0 \$58.50 20 \$0 \$0 100.0%	0.0% 0.0% 0.0 \$435.00  0.0% 0.0 \$1,170 \$0  \$58.50 20 \$0 0.0 \$1,00.0%	0.0% 0.0% 0.0 \$435.00 \$0.0 \$1,170 \$0 \$58.50 20 \$0 \$0 0.0 \$0	0.0% 0.0 \$435.00 \$0.0 \$435.00 0.0 \$1,170 \$0 \$58.50 20 \$0 0.0 0.0 \$2,100 \$11.00	0.0% 0.0 \$435.00 \$0.0 0.0 \$1,170 \$0 \$58.50 20 \$0 \$0 0.0 \$0 \$0	

RROHELTO	Irigaray Mine Unit(s)	Christensen Mine Units	Christensen Mine Unit	Christensen Mine Unit	Christensen Mine Unit	Christensen Mine Unit	Christensen Mine Unit	Christensen Mine Unit	Total Christense
LLFIELD EQUIPMENT REMOVAL & DISPOSAL	#1 Thru #9	#2 Thru #4	#5 20	#6 20	#7 20	#8	#10	#11	& Irigaray
Quantity Per Truck Load (Yds³) Disposal Cost (\$)	20 \$0	20 \$0	\$0 \$0	\$0 \$0	\$0 \$0	20 \$0	\$0 \$0	\$0	s
Total Cost - Licensed Site	\$0	\$0	\$0	\$0	\$0	\$0	\$0	so	5
Tota Recirculation Phase \$0.863 per Kgal	\$0	\$0	\$0	\$0	\$0	so	\$0	\$0	
Total Cost - Surface Trunkline Removal & Disposal	\$0	.\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Buried Trunkline	<u> </u>								
A. Removal	i .	i							
Total Quantity (Ft)	0	11565	24500	47000 \$3.12		49436	35636 \$3.12	\$3.12	
Cost of Removal (\$/Ft) Cost of Removal (\$)	\$3.12 \$0	\$3.12 \$36.083	\$3.12 \$76.440	\$3.12 \$146.640	\$3.12 \$88.920	\$3.12 \$154,240	\$111,184	\$3.12	\$613,50
Average OD (Inches)	8.750	8,750	8,750	12.000	12.000	12,000	14.000	14.000	\$013,30
Chipped Volume Reduction (Ft³/Ft)	0.088	0.088	0.088	0.130	0.130	0.130	0.152	0.152	
Chipped Volume (Ft³)	0.000	1018	2156	6110	3705	6426.68	5416.672	0.102	
Quantity Per Truck Load (Ft³)	540	540	540	540	540	540	540	540	
Number of Truck Loads	0.0	1.9	4.0	11.3	6.9	11.9	10.0	0.0	
B. Survey & Decontamination								ĺ	
Percent Requiring Decontamination	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Loads for Decontamination	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Cost for Decontamination. (\$/Load)	\$435.00	\$435.00	\$435.00	\$435.00	\$435.00	\$435.00	\$435.00	\$435.00	
Cost for Decontamination. (\$)	\$0	\$0	_\$0	\$0	\$0	\$0	\$0	\$0	
C. Transport & Disposal 1.) Landfill	1	ì			1			i I	
a. Transportation									
Percent To Be Shipped	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Loads To Be Shipped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Transportation Cost per Load	\$1,170	\$1,170	\$1,170	\$1,170	\$1,170	\$1,170	\$1,170	\$1,170	
Transportation Cost (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
b. Disposal		į			ļ			ļ	
Disposal Fee Per Yd <sup>3</sup>	\$58.50	\$58.50	\$58.50	58.5	\$58.50	\$58.50	\$58.50	\$58.50	
Yds³ Per Load	20	20	20	20	20	20	20	20	
Disposal Cost (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Total Cost - Landfill	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	;
2.) Licensed Site					ŀ		ĺ		
Transportation     Percent To Be Shipped	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
Loads To Be Shipped	0.0	1.9	4.0	11.3	6.9	11.9	10.0	0.0	
Transportation Cost per Load	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	
Transportation Cost (\$)	\$0	\$3,990	\$8,400	\$23,730	\$14,490	\$24,990	\$21,000	\$0	\$96,6
b. Disposal		,			,				*,-
Disposal Cost Per Ft <sup>3</sup>	\$11.00	\$11,00	\$11.00	\$11.00	\$11.00	\$11.00	\$11.00	\$11.00	
Disposal Fee Per Yds	\$297.00	\$297.00	\$297.00	\$297.00	\$297.00	\$297.00	\$297.00	\$297.00	
Quantity Per Truck Load (Yds³)	20	20	20	20	20	20	20	20	
Disposal Cost (\$)	\$0	\$11,286	\$23,760	\$67,122	\$40,986	\$70,686	\$59,400	\$0	\$273,2
Total Cost - Licensed Site	\$0	\$15,276	\$32,160	\$90,852	\$55,476	\$95,676	\$80,400	\$0	\$369,8
Total Cost - Transport & Disposal	\$0	\$15,276	\$32,160	\$90,852	\$55,476	\$95,676	\$80,400	\$0	\$369,8
Total Cost - Buried Trunkline Removal & Disposal Manholes	\$0	\$51,359	\$108,600_	\$237,492	\$144,396	\$249,916	\$191,584	1 \$0_	\$983,3
A. Removal					Γ				
Total Quantity		8	5	11	5	15	11	0	
Cost of Removal (\$ Each)	\$117.00	\$149.51	\$149.51	\$149.51	\$149.51	\$149.51	\$149.51	\$149.51	
Cost of Removal (\$)	\$0	\$1,196	\$748	\$1,645	\$748	\$2,243	\$1,645	so.	\$8,2
Quantity Per Truck Load	10	10	10	10		10	10	10	
Number of Truck Loads	0.0	0.8	0.5	1.1	0.5	1.5	1.1	0.0	
Survey & Decontamination	1	1							
Demont Demoising Demontors in the			0.00	0.00	0.00		0.00		
Percent Requiring Decontamination  Loads for Decontamination	0.0%	0.0%	0.0% 0.0	0.0%	0.0% 0.0	0.0% 0.0	0.0% 0.0	0.0%	
Cost for Decontamination (\$/Load)	\$435.00	\$435.00	\$435.00	\$435.00	\$435.00	\$435.00	\$435.00	\$435.00	
Cost for Decontamination (\$)	\$435.00	\$435.00	\$435.00	\$433.00	\$435.00	\$435.00	\$435.00	\$435.00	
C. Transport & Disposal		- 30	- 30	30		30	30	30	
1.) Landfill					ļ				
a. Transportation					Ì				
	1	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Percent To Be Shipped	0.0%	0.0%	0.0701						
Percent To Be Shipped Loads To Be Shipped	0.0%	0.0% 0.0 \$1,170	0.0 \$1,170	0.0 \$1,170	0.0 \$1,170	0.0 \$1,170	0.0 \$1,170	0.0 \$1,170	

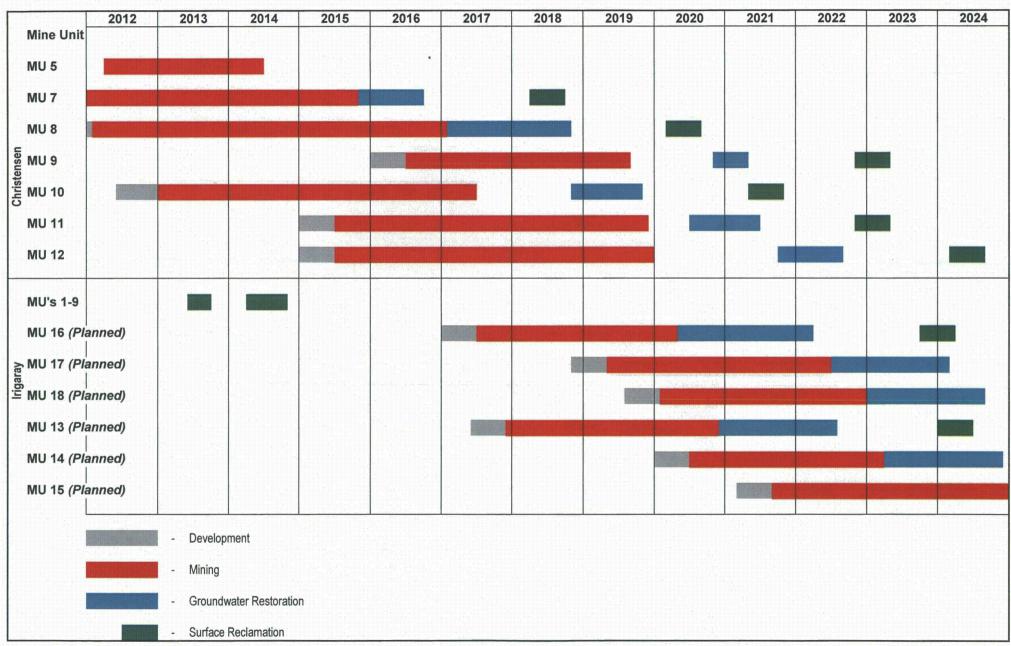
	Irigaray	Christensen	Christensen	Christensen	Christensen	Christensen	Christensen	Christensen	Total
	Mine Unit(s)	Mine Units	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Christense
LLFIELD EQUIPMENT REMOVAL & DISPOSAL	#1 Thru #9	#2 Thru #4	#5	#6	#7	#8	#10	#11	& Irigaray
Transportation Cost (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$
b. Disposal		i l			i				i
Disposal Fee Per Yd³ (\$)	\$58.50	\$58.50	\$58.50	\$58.50	\$58.50	\$58.50	\$58.50	\$58.50	
Yds³ Per Load	20	20	20	20	20	20	20	20	
Disposal Cost (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	so so	
Total Cost - Landfill	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	:
2.) Licensed Site									
a. Transportation									
Percent To Be Shipped	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	ſ
Loads To Be Shipped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Transportation Cost per Load	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	
Transportation Cost (\$)	\$0	so	\$0	\$0	\$0	\$0	\$0	l so	:
b. Disposal		i i							
Disposal Cost Per Ft <sup>3</sup>	\$11.00	\$11.00	\$11.00	\$11.00	\$11.00	\$11.00	\$11.00	\$11.00	ĺ
Disposal Fee Per Yd3	\$297.00	\$297.00	\$297.00	\$297.00	\$297.00	\$297.00	\$297.00	\$297.00	
Quantity Per Truck Load (Yds <sup>a</sup> )	20	20	20	20	20	20	20	20	ŀ
Disposal Cost (\$)	so	i sol	so	\$0	\$0	\$0	\$0	\$0	
Total Cost - Licensed Site	\$0	\$0	\$0	\$0	\$0	\$0	\$0	so.	! :
Total Cost - Transport & Disposal	so	\$0	\$0	\$0	\$0	\$0	\$0	\$0	} :
Total Cost Manhole Removal & Disposal	\$0	\$1,196	\$748	\$1,645	\$748	\$2,243	\$1,645	\$0	\$8,2
TAL COST - WELLFIELD EQUIP REMOVAL & DISP	\$26,632	\$238,196	\$175,634	\$327,884	\$305,369	\$568,816	<b>\$</b> 511,776	\$2,964	\$2,157,2

RKSHEET 7									
	Irigaray	Christensen	Christensen	Christensen Mine Unit	Christensen		Christensen	Christensen	Total
PSOIL REPLACEMENT & REVEGETATION	Mine Unit(s) #1 Thru #9	Mine Units #2 Thru #4	Mine Unit #5	Mine Unit #6	Mine Unit #7	Mine Unit #8	Mine Unit #10	Mine Unit #11	Christense & Irigaray
		WZ TINGWY		,,,			<u>, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,</u>		u mgere
Process Plant and Office Building	<u> </u>								
A. Topsoil Handling & Grading	5.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	
Affected Area (Acres) Average Affected Thickness (Ins)	12.0	2.5 12.0	0.0	0.0	0.0	0.0	0.0	0.0	
Topsoil Volume (Yds³)	8067	4033	0.0	0.0	0.0	1 0.6	l "	0.0	
Unit Cost - Haul/Place (\$/Yd³)	\$1.08	\$1.08	\$1.08	\$1.08	\$1.08	\$1.08	\$1.08	\$1.08	
Topsoil Handling Cost (\$)	\$8,744	\$4,372	\$0	\$0	\$0	\$0	\$0	\$0	
Unit Cost - Grading (\$/Ac)	\$93.42	\$93.42	\$93.42	\$93.42	\$93.42	\$93.42	\$93,42	\$93.42	
Grading Cost (\$)	\$467	\$234	\$0	\$0	\$0	SO.	\$0	\$0	
Sub Total - Topsoil	\$9,211	\$4,606	\$0	\$0	so	\$0	\$0	\$0	\$13,8
B. Radiation Survey & Soil Analysis									
Unit Cost (\$/Ac)	\$520.00	\$520.00	\$520.00	\$520.00	\$520.00	\$520.00	\$520.00	\$520.00	
Sub Total - Survey & Analysis	\$2,600	\$1,300	\$0	\$0	\$0	\$0	\$0	\$0	\$3,9
C. Revegetation					_				
Fertilizer (\$/Ac)	\$46.49	\$46.49	\$46.49	\$46.49	\$46.49	\$46.49	\$46.49	\$46.49	
Seeding Prep & Seeding (\$/Ac)	\$280.00	\$280.00	\$280.00	\$280.00	\$280.00	\$280.00	\$280.00	\$280.00	
Mulching & Crimping (\$/Ac)	\$276.54	\$276.54	\$276.54	\$276.54	\$276.54	\$276.54	\$276.54	\$276.54	
Sub Total Cost/Acre	\$603.03	\$603.03	\$603.03	\$603.03	\$603.03	\$603.03	\$603.03	\$603.03	
Sub Total - Revegation	\$3,015	\$1,508	\$0	\$0	\$0	\$0	\$0	\$0	\$4,5
Sub Total - Process Plant and Office Bldg.	\$14,827	\$7,413	\$0	\$0	\$0	\$0	\$0	\$0	\$22,2
Ponds A. Topsoil Handling & Grading	<del>                                     </del>					ı			
A. Topsoil handling & Grading Affected Area (Acres)	20.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0	
Average Affected Thickness (Ins)	12	12.0	0.0	0.0	0.0	ان" ا	1 0.0	0.0	
Topsoil Volume (Yds³)	32267	19360	ŏ	0	Ĭ	آ ا	l ő	ان	
	\$1.08	\$1.08	\$1.08	\$1.08	\$1.08	\$1.08	\$1.08	\$1.08	
Unit Cost - Haul/Place (\$/Yd³)		\$20.986	\$1.00	\$1.08	\$1.00	\$1.00	\$1.00	\$1.00	
Topsoil Handling Cost (\$) Unit Cost - Grading (\$/Ac)	\$34,977 \$93,42	\$93.42	\$93.42	\$93.42	\$93.42	\$93.42	\$93.42	\$93.42	
Grading Cost (\$)	\$1,868	\$1,121	\$0	\$93.42	\$0	\$93.42	\$0	\$93.42	
Sub Total - Topsoil	\$36,845	\$22,107	\$0 \$0	\$0 \$0	\$0	s0	\$0	s0 s0	\$58.9
B. Radiation Survey & Soil Analysis	\$30,043	WZZ, 107	<del>40</del> .						900,0
Unit Cost (\$/Ac)	\$520.00	\$520.00	\$520.00	\$520.00	\$520.00	\$520.00	\$520.00	\$520.00	
Sub Total - Survey & Analysis	\$10,400	\$6,240	\$0	\$0	\$0	\$0	\$0	\$0	\$16,8
C. Revegation		00,2.10				,		,-	¥,
Fertilizer (\$/Ac)	\$46.49	\$46.49	\$46.49	\$46.49	\$46.49	\$46.49	\$46,49	\$46.49	
Seeding Prep & Seeding (\$/Ac)	\$280.00	\$280.00	\$280.00	\$280.00	\$280.00	\$280.00	\$280.00	\$280.00	
Mulching & Crimping (\$/Ac)	\$276.54	\$276.54	\$276.54	\$276.54	\$276.54	\$276.54	\$276.54	\$276.54	
Sub Total Cost/Acre	\$603.03	\$603.03	\$603.03	\$603.03	\$603.03	\$603.03	\$603.03	\$603.03	
Sub Total - Revegation	\$12,061	\$7,236	\$0_	\$0	\$0	_\$0_	\$0	\$0	\$19,2
Sub Total - Ponds	\$59,306	\$35,584	\$0	\$0	\$0	\$0	\$0	\$0	\$94,8
Wellfields							,		
A. Topsoil Handling & Grading						l	l		
Affected Area (Acres)	40.0	55.0	30.0	50.0	35.0	40.0	35.0	0.0	
Average Affected Thickness (Ins)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
Topsoil Volume (Yds³)	18822	25881	14117	23528	16469	18822	16469	0	
Unit Cost - Haul/Place (\$/Yd³)	\$1.08	\$1.08	\$1.08	\$1.08	\$1.08	\$1.08	\$1.08	\$1.08	
Topsoil Handling Cost (\$)	\$20,403	\$28,055	\$15,302	\$25,504	\$17,853	\$20,403	\$17,853	\$0	
Unit Cost - Grading (\$/Ac)	\$93.42	\$93.42	\$93.42	\$93.42	\$93.42	\$93.42	\$93.42	\$93.42	
Grading Cost (\$)	\$3,737	\$5,138	\$2,803	\$4,671	\$3,270	\$3,737	\$3,270	\$0	6474
Sub Total - Topsoil  B. Radiation Survey & Soil Analysis	\$24,140	\$33,193	\$18,105	\$30,175	\$21,123	\$24,140	\$21,123	\$0	\$171,9
Unit Cost (\$/Ac)	\$520.00	\$520.00	\$520.00	\$520.00	\$520.00	\$520.00	\$520.00	\$520.00	
Sub Total - Survey & Analysis	\$20,800	\$28,600	\$15,600	\$26,000	\$18,200	\$20,800	\$18,200	\$520.00	\$148,2
C: Spill Cleanup	#20,000	⊕20,000	913,000	₩ZŪ,ŪŪŪ	₩ 10,200	₩ <u>20,000</u>	ψ,υ, <u>ε</u> υυ	φ0	9140,
Affected Area (Acres)		0.036	0	0	0	0	0	0	
Affected Area (ft²)	]	1,568	١	ő		ő	ì	a	
			0			0		0	
Average Affected Thickness (ft)	]	0.25		0	0		0		
Affected Volume (ft³)	}	392	0	0	0	0	0		
Quantity per Truckload (ft³)		540	540	540	540	540	540	540	
Quantity to be Shipped (Loads)	1	0.7	0.0	0.0	0.0	0.0	0.0	0.0	
	1	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	\$2,100	
Transportation Cost per Load				\$0	\$0	\$0	\$0	\$0	
Transportation Cost per Load Transportation Cost (\$)		\$1,524	\$0						
Transportation Cost per Load Transportation Cost (\$) Handling Cost (\$240/load)		\$174	\$0	\$0	\$0	\$0	\$0	\$0	
Transportation Cost per Load Transportation Cost (\$)					\$0 \$3.70				

ORKSHEET 7									
	Irigaray	Christensen	Total						
	Mine Unit(s)	Mine Units	Mine Unit	Christensen					
PSOIL REPLACEMENT & REVEGETATION	#1 Thru #9	#2 Thru #4	#5	#6	#7	#8	#10	#11	& Irigaray
Sub Total - Spill Cleanup	\$0_	\$3,151	\$0	\$0	\$0	_\$0_	\$0	\$0	\$3,15
D. Revegation									
Fertilizer (\$/Ac)	\$46.49	\$46.49	\$46.49	\$46.49	\$46.49	\$46.49	\$46.49	\$46.49	
Seeding Prep & Seeding (\$/Ac)	\$280.00	\$280.00	\$280.00	\$280.00	\$280.00	\$280.00	\$280.00	\$280.00	
Mulching & Crimping (\$/Ac)	\$276.54	\$276.54	\$276.54	\$276.54	\$276.54	\$276.54	\$276.54	\$276.54	
Sub Total Cost/Acre	\$603.03	\$603.03	\$603.03	\$603.03	\$603.03	\$603.03	\$603.03	\$603.03	
Sub Total - Revegation	\$24,121	\$33,167	\$18,091	\$30,152	\$21,106	\$24,121	\$21,106	\$0	\$171,864
Sub Total - Wellfields (\$)	\$69,061	\$98,110	\$51,796	\$86,327	\$60,429	\$69,061	\$60,429	\$0	\$495,212
Roads							_		
A. Topsoil Handling & Grading									
Affected Area (Acres)	25.0	20.0	15.0	21.0	12.0	15.0	10.0	0.0	
Average Affected Thickness (Ins)	12	12	12	12	12	12	12	12	
Topsoil Volume (Yds³)	40333	32267	24200	33880	19360	24200	16133	0	
Unit Cost - Haul/Place (\$/Yd³)	\$1.08	\$1.08	\$1.08	\$1.08	\$1.08	\$1.08	\$1.08	\$1.08	
Topsoil Handling Cost (\$)	\$43,721	\$34.977	\$26,233	\$36,726	\$20,986	\$26,233	\$17,489	\$0	
Unit Cost - Grading (\$/Ac)	\$93.42	\$93.42	\$93.42	\$93.42	\$93.42	\$93.42	\$93.42	\$93.42	
	\$2,336		\$1,401	\$1,962	\$1,121	\$1,401	\$934	\$93.42	
Grading Cost (\$)		\$1,868							6247.00
Sub Total - Topsoil	\$46,057	\$36,845	\$27,634	\$38,688	\$22,107	\$27,634	\$18,423	\$0	\$217,38
B. Radiation Survey & Soil Analysis									
Unit Cost (\$/Ac)	\$520.00	\$520.00	\$520.00	\$520.00	\$520.00	\$520.00	\$520.00	\$520.00	
Sub Total - Survey & Analysis	\$13,000	\$10,400	\$7,800	\$10,920	\$6,240	\$7,800	\$5,200	SO_	\$61,36
C. Revegation					l	1			
Fertilizer (\$/Ac)	\$46.49	\$46.49	\$46.49	\$46.49	\$46.49	\$46.49	\$46.49	\$46.49	
Seeding Prep & Seeding (\$/Ac)	\$280.00	\$280.00	\$280.00	\$280.00	\$280.00	\$280.00	\$280.00	\$280.00	
Mulching & Crimping (\$/Ac)	\$276.54	\$276.54	\$276.54	\$276.54	\$276.54	\$276.54	\$276.54	\$276.54	
Sub Total Cost/Acre	\$603.03	\$603.03	\$603.03	\$603.03	\$603.03	\$603.03	\$603.03	\$603.03	
Sub Total - Revegation	\$15,076	\$12,061	\$9,045	\$12,664	\$7,236	\$9,045	\$6,030	\$0	<b>\$7</b> 1,15
Sub Total - Roads (\$)	\$74,133	\$59,306	\$44,480	\$62,271	\$35,584	\$44,480	\$29,653	\$0	\$349,90
Other	\$1.1,100	000,000		V,	***		020,000		
A. Topsoil Handling & Grading							T		
Affected Area (Acres)	41.0	19.0	5.0	5.0	5.0	5.0	5.0	0.0	
						3.0	3.0	0.0	
Average Affected Thickness (Ins)	0.0	0.0	0	0	0		-		
Topsoil Volume (Yds³)	0	0	0	0	0	0	0	0	
Unit Cost - Haul/Place (\$/Yd3)	\$1.08	\$1.08	\$1.08	\$1.08	\$1.08	\$1.08	\$1.08	\$1.08	
Topsoil Handling Cost (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Unit Cost - Grading (\$/Ac)	\$93.42	\$93.42	\$93.42	\$93.42	\$93.42	\$93.42	\$93.42	\$93.42	
Grading Cost (\$)	\$3,830	\$1,775	\$467	\$467	\$467	\$467	\$467	\$0	
Sub Total - Topsoil	\$3,830	\$1,775	\$467	\$467	\$467	\$467	\$467	\$0	\$7,94
B. Radiation Survey & Soil Analysis									
Unit Cost (\$/Ac)	\$520.00	\$520.00	\$520.00	\$520.00	\$520.00	\$520.00	\$520.00	\$520.00	
Sub Total - Survey & Analysis	\$21,320	\$9,880	\$2,600	\$2,600	\$2,600	\$2,600	\$2,600	\$0	\$44,20
C. Revegation			<b>V</b> = 000			,-,			
Fertilizer (\$/Ac)	\$46.49	\$46.49	\$46.49	\$46.49	\$46.49	\$46.49	\$46.49	\$46.49	
	\$280.00		\$280.00	\$280.00	\$280.00	\$280.00	\$280.00	\$280.00	
Seeding Prep & Seeding (\$/Ac)		\$280.00							
Mulching & Crimping (\$/Ac)	\$276.54	\$276.54	\$276.54	\$276.54	\$276.54	\$276.54	\$276.54	\$276.54	
Sub Total Cost/Acre	\$603.03	\$603.03	\$603.03	\$603.03	\$603.03	\$603.03	\$603.03	\$603.03	
Sub Total - Revegation	\$24,724	\$11,458	\$3,015	\$3,015	\$3,015	\$3,015	\$3,015	\$0	\$51,25
Sub Total - Other	\$49,874	\$23,113	\$6,082	\$6,082	\$6,082	\$6,082	\$6,082	\$0	\$103,39
Remedial Action									
A. Topsoil Handling & Grading									
Affected Area (Acres)	65.5	54.3	25.0	38.0	26.0	30.0	25.0	0.0	
Average Affected Thickness (Ins)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Topsoil Volume (Yds³)	1 0	0.0	0.0	0.0	0	0	ا	0	
Unit Cost - Haul/Place (\$/Yd³)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Topsoil Handling Cost (\$)	\$0.00	\$0.00	\$0.00	\$0.50	\$0.00	\$0	\$0.00	\$0.50	
Unit Cost - Grading (\$/Ac)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
	\$0.00				\$0.00	\$0.00	\$0.00	\$0.00	
Grading Cost (\$)		\$0	\$0	\$0					
Sub Total - Topsoil	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$
B. Radiation Survey & Soil Analysis			l		l				
Unit Cost (\$/Ac)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Sub Total - Survey & Analysis	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
C. Revegation		•							
Fertilizer (\$/Ac)	\$46.49	\$46.49	\$46.49	\$46.49	\$46.49	\$46.49	\$46.49	\$46,49	
	\$280.00	\$280.00	\$280.00	\$280.00	\$280.00	\$280.00	\$280.00	\$280.00	
Seeding Prep & Seeding (\$/Ac)			Ψ200.00	¥200.00	, w_00.00				
Seeding Prep & Seeding (\$/Ac)			\$276.54	\$276.54	\$276.54	1 \$276 SA	1 \$276.54	\$276.54	
Seeding Prep & Seeding (\$/Ac) Mulching & Crimping (\$/Ac) Sub Total Cost/Acre	\$276.54 \$603.03	\$276.54 \$603.03	\$276.54 \$603.03	\$276.54 \$603.03	\$276.54 \$603.03	\$276.54 \$603.03	\$276.54 \$603.03	\$276,54 \$603.03	

	Irigaray	Christensen	Christensen	Christensen	Christensen	Christensen	Christensen	Christensen	Total
	Mine Unit(s)	Mine Units	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Christensen
TOPSOIL REPLACEMENT & REVEGETATION	#1 Thru #9	#2 Thru #4	#5	#6	#7	#8	#10	#11	& Irigaray
Sub Total - Revegation	\$39,498	\$32,714	\$15,076	\$22,915	\$15,679	\$18,091	\$15,076	\$0	\$159,049
Sub Total - Remedial Action	\$39,498	\$32,714	\$15,076	\$22,915	\$15,679	\$18,091	\$15,076	\$0	\$159,049
TOTAL COST - TOPSOIL & REVEGETATION	\$306,699	\$256,240	\$117,434	\$177,595	\$117,773	\$137,714	\$111,240	\$0	\$1,224,695

ORKSHEET 8	Irigaray	Christensen	Christensen	Christensen	Christensen	Christensen	Christensen	Christensen	Total
	Mine Unit(s)	Mine Units	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Mine Unit	Christense
MISCELLANEOUS RECLAMATION	#1_Thru #9	#2 Thru #4	#5	#6	#7	#8	#10	#11	& Irigaray
I Fence Removal & Disposal	1								
Quantity (Feet)	15240	35260	20000	9000	18000	19300	19548	0	
Cost of Removal/Disposal (\$/Ft)	\$0.32	\$0.32	\$0.32	\$0.32	\$0.32	\$0.32	\$0.32	\$0.32	
Cost of Removal/Disposal (\$)	\$4,877	\$11,283	\$6,400	\$2,880	\$5,760	\$6,176	\$6,255	\$0	\$43,63
II Powerline Removal & Disposal									
Quantity (Feet)	9450	10565	18000	18000	5500	21990	13136	0	
Cost of Removal/Disposal (\$/Ft)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Cost of Removal/Disposal (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	9
III Powerpole Removal & Disposal									
Quantity	25	30	60	60	19	74	44	0	
Cost of Removal/Disposal (\$/Each)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Cost of Removal/Disposal (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	9
IV Transformer Removal & Disposal									
Quantity	0	1	O O	0	18	27	18	0	
Cost of Removal/Disposal (\$/Each)	\$0.00	\$0.00	\$0.00	\$0.00	\$0	\$0	\$0	\$0	
Cost of Removal/Disposal (\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
V Booster Pump Assembly Removal 8									
Quantity	0	6	5	5	12	16	12	0	
Cost of Removal/Disposal (\$/Each)	\$248	\$248	\$248	\$248	\$248	\$248	\$248	\$248	
Cost of Removal/Disposal (\$)	\$0	\$1,488	\$1,240	\$1,240	\$2,976	\$3,968	\$2,976	\$0	\$13,88
VI Culvert Removal & Disposal		<u> </u>	<b></b>		42,0.0	<u> </u>	<del>+</del> =,=,=		•
Quantity (Feet)	150	1200	1000	1000	500	20	20	Ó	
Cost of Removal/Disposal (\$/Ft)	\$6.89	\$6.89	\$6,89	\$6.89	\$6.89	\$6.89	\$6.89	\$6.89	
Cost of Removal/Disposal (\$)	\$1.034	\$8,270	\$6,892	\$6,892	\$3,446	\$138	\$138	\$0	\$26,80
VII Guardrail Removal	\$1,004	Ψ0,210	40,002	40,002	Ψ0,110	Ψ10 <u>0</u>	<b>\$100</b>		420,00
Quantity (Feet)	200	3000	0	0	0	0	0	0	
Cost of Removal/Disposal (\$/Ft)	\$6,44	\$6.44	\$6.44	\$6.44	\$6.44	\$6.44	\$6.44	\$6,44	
Cost of Removal/Disposal (\$)	\$1,288	\$19.320	\$0	\$0	\$0	\$0	\$0	\$0	\$20.60
VIII Low Water Stream Crossing	ψ1,200	Ψ13 <sub>1</sub> 525	- 40	Ψ0	- 40_	40			Ψ20,00
Quantity	0	1	1	0	0	0	0	0	
Cost of Removal/Disposal (\$/Each)	\$4,500	\$4,500	\$4,500	\$4,500	\$4,500	\$4,500	\$4,500	\$4,500	
Cost of Removal/Disposal (\$)	\$0	\$4,500	\$4,500	\$0	\$0	\$0	\$0	\$0	\$9.00
IX Utilities Cost		Ψ4,500	<b>\$4,500</b>	40	40	Ψ0	40		Ψ3,00
Quantity (Mos)		8	Λ	4	4	4	4	0	
Power (\$/Month)	\$65	\$65	\$65	\$65	\$65	\$65	\$65	\$65	
Telephone (\$/Month)	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	
Total Cost (\$)	\$00	\$4,520	\$2,260	\$2,260	\$2,260	\$2,260	\$2,260	\$000	\$15.82
Total Cost (9)		Φ4,520	\$2,200	Ψ∠,∠00	ΦZ,ZOU_	\$2,200	<b>⊅∠,∠0</b> ∪	<u></u> 30	<b>⊅10,6</b> 2
TOTAL MISCELLANEOUS COST	\$7,199	\$49,381	\$21,292	\$13,272	\$14,442	\$12,542	\$11,629	\$0	\$129.75
LOTAL MISCELLANEOUS COST	1 2/,199	<b>\$49,381</b>	J21,292	\$13,2/2	<b>⊅14,44</b> ∠	\$12,542	\$11,029	\$0	\$129,7



# The following 3 Drawings specifically reference

**Uraniumone Willow Creek Permit #478** 

Abandon Wells, Installed wells

# And

Irigaray & Christensen Ranch
Environmental Monitoring
Station Locations

**D01 to D03X**