



Colorado Department
of Public Health
and Environment

Compliance Inspection Report Laboratory and Radiation Services Division Uranium Recovery Facilities – Part 18 Licenses

Name: Cotter Corporation	License Number: 369-01 Amendment: 52
Doing business as: same	License Expiration Date: 1/30/2012
Address: 0502 Fremont County Road 68 P.O. Box 1750 Canon City, CO 81215-1750	License Category: 2A2
	Telephone Number: 719-275-7413
	Telefax Number: 719-275-1669
Radiation Safety Officer: Jim Cain	RSO Phone Number: 719-275-7413 x212
RSO E-mail address: jim.cain@cottercc.com	Checks e-mail regularly: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Management Contact: John Hamrick, mill manager	MGMT Phone No. 720-554-6205
Address/Location of Inspection: 0502 Fremont County Road 68 Canon City, Colorado 81212	Location Phone No. 719-275-7413
	Inspection: <input checked="" type="checkbox"/> Routine <input type="checkbox"/> Non-routine
	Complete Inspection: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	Date of Inspection: 6-15-2011
	Date of Closeout: 6-17-2011
	Inspection: <input type="checkbox"/> Announced <input checked="" type="checkbox"/> Unannounced
	Form 59 Used: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Lead Inspector: P.V. Egidi Accompanying Inspector(s): E. Ethington	
INSPECTION FINDINGS: Citations: 1 Repeat Citations: 0 Prior Citations: 1 Items of Concern: 4 Recommendations: 1	
RCD 59-1 Notice of Compliance Inspection Results Issued at inspection Closeout: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
RCD 59-3 Compliance Report Supplemental Information Issued at inspection Closeout: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
A written response or follow-up actions is required from the licensee: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Notice of Violation Issued: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Date Mailed: NOV Follow-up mailed on:	
Response Received: Adequate: Yes <input type="checkbox"/> No <input type="checkbox"/>	
Acceptance Letter Mailed:	
Last Inspection Date: By: Egidi, Ethington, James DeWolfe, Mark Dater No. of Citations: 2	
This Report Consists of Page 1 through Page (15) with (1) attachments	
Inspector's Signature(s) Date	Reviewer's Signature(s) Date
1. 7/29/11	1. 8/11/11
2. _____	2. _____
3. _____	3. _____

CITATIONS	REPEAT ITEM
1. LC requires 8.6 states "The Department does not permit, authorize, concur in, or otherwise approve of, the prohibited release or threatened release of a hazardous substance, pollutant, or contaminant into the environment," and 14.1 requires that "the licensee shall maintain all equipment and facilities, essential to operations governed by this license, in operating condition." Contrary to this requirement, a spill on 11/28/10 was caused by not properly closing the vault for the pumpback system resulting in a frozen flange and a release of uranium-contaminated water to the environment in excess of 500 gallons.	
ITEMS OF CONCERN / RECOMMENDATIONS	
IOCs:	
1. All remediation activities need to have active dust suppression; inspectors observed remediation of contaminated soils with no dust suppression in the area while on a site tour with NRC and EPA.	
2. The LIMS system upgrades are still not fully implemented, which is not consistent with the approved QAPP. This is a repeat IOC. Partial implementation precludes a NOV at this time.	
3. The site-wide decommissioning plan and reclamation plan reviews are being addressed under separate cover. This was an IOC during last year's inspection. There have been numerous delays in this process that may result in enforcement actions by the Division if not rectified.	
4. Cotter has removed the "grimace" portion of the fit test procedure, which is part of standard protocol. It is not clear why this was removed, nor documented.	
Recommendations:	
1. The license renewal process needs to be undertaken in a timely manner such that the comprehensive renewal application that will be due at the end of 2011 will be of sufficient quality for the Division to undertake the review.	
Persons Interviewed: Name, position, type of interview ("O" Opening interview; "I" Interview; "C" Closeout)	
Jim Cain, RSO, O,I,C	
Mark Currey, ARSO, I Linda, O,I,C	
Frank Adamic, QA/QC, O	
Phil Krauth, Manager, O Mitch Abbate, Lab Super, O	

Inspection Items	A	V	P	I	R	N	N	Comments
	A	V	P	I	R	N	N	

key: A = adequate V = Violation PV = Previous Violation IC = Item of Concern R = Recommendation NR = Not Reviewed NA = Not Applicable

1. Radiation Safety Officer								
A. Individual Named on License	X							
B. Refresher Training	X							
C. Level of Involvement in Program	X							
D. Knowledge and Experience	X							
E. Management Support	X							
2. Radioactive Material Users								
A. Authorized users on License (LC 8.14)	X							current
B. Supervised Users	X							
1) Training and experience	X							
2) Documentation of Training	X							
3) Supervisor Level of Involvement	X							
C. Site workers	X							
1) Documentation of Training (LC 16)	X							
2) Documentation of OJT	X							
3. Other Persons On-site								
A. Administrative Personnel	X							
1) training	X							
2) dose limits / dose assessments	X							
B. Security Personnel							X	Staff does security also
1) training	X							
2) dose limits / dose assessments	X							
C. Contracted Labor								
1) training	X							
2) escorts / supervision	X							
3) dose limits / dose assessments	X							
5) site entry / exit logs	X							
6) contamination surveys	X							
D. Site Visitors								Standard visitor training
1) training	X							
2) escorts / supervision	X							
3) dose limits / dose assessments	X							
5) site entry / exit logs	X							
6) contamination surveys	X							
4. Incidents / Unsafe Conditions								
A. Non-reportable events / conditions (LC 9.4.2.2)		X						Spill of 11/28/10 a release to the environment and should have been reported to us. See NOV #1
1) Cause Investigation	X							
2) Timely Resolution	X							
3) Measures to prevent re-occurrence	X							
B. Reportable events / conditions							X	
1) Documentation / Records							X	
2) Reported to CDPHE		X						See NOV #1
3) Timeliness of reporting							X	
4) Investigation / Resolution							X	
5) Measures to prevent re-occurrence							X	
5. Radioactive Materials Inventory								
A. Authorized Radionuclides / Form	X							
B. Within Licensed Possession Limit	X							
C. Receipt Records	X							No new material received
D. Process Records	X							Daily sheets, spreadsheet tracking
E. Placement into Repository Cell	X							Tracked by tons or cy / month

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F. Transfer Records (also see LC9.4.3)	X							Negotiating with SCATR for Cs sources
G. Disposal Records						X		No offsite disposal
6. Radioactive Sealed Sources (LC 21)								Most gauges taken down and put in storage. Negotiating with SCATR for Cs sources
RH 160 Source Leak Test, Shutter Test, and Inventory, Revision #3, dated 4/15/04	X							
RH 170 Industrial Device Installation, Revision #3, dated 7/26/04	X							
A. Current Inventory Documented	X							
B. Authorized Radionuclide	X							
C. Authorized Manufacturer / model	X							
D. How Used	X							
E. Gauge Relocation	X							
1) surveys at new location	X							
F. Receipt Records	X							
G. Transfer Records	X							
H. Disposal Records	X							
I. Leak Tests	X							
1. Personnel taking wipe sample	X							
2. Procedure	X							
3. Proper Analysis	X							
4. Frequency	X							
5. Leak Test Records	X							
7. Posting								
RH 030 Postings, Revision #2, dated 7/20/04	X							
A. Notice to Employees	X							
B. License	X							
C. Regulations	X							
D. Emergency Call List	X							
E. Radiation Signs (LC 20)	X							
1. Fence and Gate Areas	X							
2. Use Area	X							
3. Storage Area	X							
8. Training Content and Duration								
RH 010 Radiological Health and Safety Training, Revision #3, dated 7/22/04	X							
A. Production Workers	X							
B. Administrative Staff	X							
C. Janitorial						X		Staff does janitorial
D. Security Personnel						X		Staff does security during stand down
E. Contracted Service Providers	X							
F. Site Visitors	X							
G. Refresher Training	X							
H. Course Instructor	X							
AD 060 Training Records Documentation and Tracking, Revision #3, dated 7/30/04	X							
9. ALARA Program								
AD 080 ALARA Program, Revision #2, dated 7/30/04								
A. Program Implementation	X							
B. Annual Program Review (incl. LC 10.3.2)	X							

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AD 040 Radiation Protection Program Performance Review, Revision #2, dated 7/21/04								
C. Annual Report (LC 28)	X							
D. RSO Facility Audits / Reports (LC 10.3.1)	X							
E. Correcting Program Deficiencies	X							
F. Records	X							
G. Weekly Inspections (LC 10.1/2)	X							
H. Eating and smoking restrictions (LC 19)	X							
I. Semi-Annual Reports (LC 28.1.2)	X							
10. Transportation of RAM								Shipped Van Bird as SCO-I See notes
A. Shipping Papers	X							
B. Appropriate Packaging	X							
C. Package Labeling	X							
D. Package Placement in Vehicle	X							
E. Package Surveys and Wipe Tests	X							
F. Security	X							
G. Placards	X							
H. Vehicle Survey	X							
I. Emergency Response	X							
11. Dose Monitoring (LC 26)								
EV 070 Environmental Thermoluminescent Dosimetry, Revision #1, dated 7/31/03								Occupational doses are reviewed by CDPHE quarterly.
A. NVLAP Supplier	X							US Dosimetry #B-5045
B. Dosimeter Type & Exchange Freq.	X							TLD
C. Investigations / Action Levels	X							Per SOP
E. Dosimeter Storage Location	X							
F. Direct Reading Pocket Dosimeter						X		
1) calibration						X		
G. Timely Processing	X							
H. Lost Dosimeters	X							
I. Bioassay								
RH 050 Uranium Bioassay, Revision #3, dated 7/30/04	X							No problems this year.
RH 051 Special Health Investigations - Thorium, Revision #3, dated 4/15/04	X							No S.H.I.T. this period
1) Sample Collection	X							
2) Frequency of Tests / Sampling	X							
3) Timely Laboratory Analysis	X							
4) Adequate Level of Detection	X							
5) How Bioassay Results Are Used	X							
6) Problems / Corrective Actions	X							
7) Records	X							
8) Exceed Soluble U Intake Limits	X							
J. Determining Worker's CEDE								
RH 130 Occupational General Air Particulate Survey, Revision #4, dated 7/29/04	X							
RH 140 Radon-222/Radon-220 Decay Product Surveys, Revision #4, dated 7/29/04	X							
RH 150 Occupational Breathing Zone Monitoring, Revision #3, dated 7/29/04	X							

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Isotopes	X							
LLDs	X							
Approved lab	X							
14. Operating / Handling Procedures								
A. Receipt of Materials								
1. Surveys	X							
2. Records	X							
B. Storage of Materials								
1. Materials Received for Processing	X							None
2. Products						X		
3. Waste Materials						X		
4. Access / Security for storage area	X							
C. Use of Radioactive Materials								
1. Handling Precautions	X							Lab
2. Use area set up	X							
3. Safety equipment	X							
4. Time, Distance, Shielding	X							
5. Radiation Work Permits (RWP) (LC 18)	X							Reviewed during inspection. See Notes
RH 060 Radiation Work Permit, Revision #4, dated 7/30/04	X							documented
6. General Maintenance (LC 14) RH 110 Beta and/or Gamma Exposure Rate Surveys, Revision #4, dated 7/30/04	X							
RH 120 Alpha, Beta-Gamma Contamination Surveys, Revision #4, dated 7/29/04	X							
RH 121 Alpha, Beta-Gamma Smear Sampling, Revision #7, dated 7/29/04	X							
D. Transfer of Materials (LC 24)	X							
RH 100 Shipments of Yellowcake, Ore or Contaminated Equipment, Revision #3, dated 3/1/04	X							Vanadium Bird shipped as SCO-I to White Mesa
1. Authorized recipient	X							
2. Recipient License on file	X							
3. Records								
E. Disposal of Radioactive Materials								
1. Sewer Disposal/Effluent Levels						X		
2. Placement in the Impoundment	X							documented
3. Transfer for Disposal	X							
4. Authorized Recipient	X							Dennison
5. Disposal Records	X							Inventoried and tracked by JoAnn
F. Emergency Procedures (LC 9)								
ER 010 Emergency Response, Revision #4, dated 4/6/04								
1. Contacts and Emergency No.	X							
2. Response Procedures	X							
3. Decontamination Methods	X							
4. Investigation / follow-up	X							
G. Written Operating Procedures (LC 13)	X							
Control and Dist. Of Procedures (AD 020)	X							
AD 030 Organization, Revision #2, dated 7/30/04	X							
AD 010 Corporate Policy Statement	X							

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1. Rad Safety Procedures Manual	X							
2. Site Safety Manual						X		No changes
3. Site Security Manual						X		
4. Lab Procedures Manual	X							New ICPMS, SOPs being developed
5. SLSMMP (LC 23)	X							
6. QAPP (LC 25.2)	X							Edgar has reviewed this year
15. Radiation Detection Equipment (LC 25.3)								
A. Survey Instruments	X							
1. Appropriate Detection Capability	X							
2. Instruments Available	X							
3. Calibration	X							
4. Correction Charts or Graphs	X							
5. Check and Calibration Sources	X							
6. Survey Procedures	X							
7. Records	X							
B. Liquid Scintillation Counters							X	
C. Well Counters							X	
D. Wipe Counters	X							
E. Air samplers	X							documented
RH 152 Calibration of Air Samplers Using Mass Air Flow Method, Revision #3, dated 3/19/04	X							documented
16. Radiation Measurement Lab								
A. Analysis of Air Filters	X							
1. Procedures	X							
2. Equipment	X							New ICPMS instrument
3. Limit of Detection	X							
B. Bioassay Sampling Analysis								
1. Procedures	X							
2. Equipment	X							
3. Limit of Detection	X							
C. QA / QC methods	X							
D. Split-Sample Analysis at other lab	X							
E. Contamination Control	X							
17. Radiation Safety Precautions								
A. No food or tobacco in use areas	X							
B. RSO Designated break areas	X							
C. Routine Surveys of break areas (LC 26.5)								
1) survey methods and frequency	X							
2) action levels (LC 26.6)	X							
3) records	X							
D. Surveys of Personnel								
RH 200 Personnel Release Surveys, Revision #5, dated 7/30/04	X							
RH 210 Personal Radiation Monitors, Revision #2, dated 7/29/04	X							
RH 211 Pocket Ion-chamber Dosimeter Calibration, Revision #1, dated 1/14/04	X							
1) entering break/eating areas	X							
2) departing the facility	X							
3) action levels (LC 26.6)	X							
4) records	X							

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E. Surveys of Equipment								
RH 020 Decontamination, Revision #2, dated 7/28/04	X							
RH 070 Release of Equipment to Unrestricted Areas, Revision #6, dated 7/30/04	X							Vandium bird surveyed and released as SCO-I
1) removed from contaminated area	X							
2) departing the facility (LC 24)	X							
3) action levels (LC 26.6)	X							
4) records	X							
F. Contamination Control								
1) Labeling	X							
2) Movement of Materials	X							
3) Coverings, spill containers, etc.	X							
4) watering surfaces	X							
5) action levels (LC 26.6)	X							
G. Personnel Apparel (LC 17)								
H. Respiratory Protection Program								
RH 180 Respirator Inspection, Maintenance, Cleaning and Storage, Revision #2, dated 7/21/04	X							
RH 190 Respirator Use and Fit Test, Revision #2, dated 7/21/04	X							
1) Protective Equipment Used	X							Mostly half face
2) Physical and Fit Test	X							Exclude grimace. See IOC
3) Policies for Respirator Use	X							
4) Written Procedures	X							
5) Equipment Maintenance	X							
6) Equipment Storage	X							
7) Worker Training	X							
8) Records	X							
I. Breathing Zone Sampling								
1) Equipment Type	X							
2) Equipment Calibration	X							documented
3) Equipment Serviceability	X							
4) Written Procedures	X							
5) Sample Analysis	X							
a) Methods	X							
b) LLD	X							
c) Timeliness of Analysis	X							
6) Data collection and Use	X							
J. Surveys of Public Access Areas								routine
1) contamination levels	X							
2) exposure rates	X							
3) action levels	X							
4) records	X							
K. Security	X							Most buildings remain locked down
18. Ventilation								
A. Hood flow rates	X							Checked with anometer
B. Filter exchanges						X		
C. Effluent Concentrations						X		
19. X-ray equipment							X	
A. registered							X	
20. Waste Impoundment (LC23)								
pH levels	X							
Exposed beaches	X							

Inspection Items	A	V	P V	I C	R	N R	N A	Comments
EV 120 Radon Flux Measurement, Revision #2, dated 7/30/04	X							EPA now reviews NESHAPS. Impoundments in closure, Subpart W no longer applies
SLSMMP	X							
21. Ground Water								
Ground Water Corrective Action (LC 23)	X							Ongoing
Quarterly Reports (LC 27.8)	X							
22. Engineering Controls								
Dust suppression				X				Observed remediation w/no dust suppression Release of U to ground
23. Other Specific Items								
Readiness Review	X							
Standby conditions and haz assessment	X							
Permits of Other Agencies LC 8.8	X							
Facility or Process Change (LC 12.1)	X							Demolition, no processing
Air Emissions Controls (LC 22)	X							APCD
Decontamination and Decommissioning (LC 29)	X							Facility under active D&D
EV 040 Water Quality Monitoring, Revision #3, dated 7/21/04	X							
EV 041 Measurement of pH of Water Samples	X							
EV 042 Measurement of Electrical Conductivities of Water Samples	X							
EV 043 Water Level Measurements	X							
EV 044 Sampling Equipment Decontamination	X							
EV 045 Oxygen in Water	X							
EV 060 Vegetation Sampling	X							
EV 100 Impoundment Liner Breakthrough and Corrective Measures, Revision #2, dated 7/2/04	X							
EV 090 Arkansas River Water Sample Collection, Revision #0, dated 1/13/04	X							
EV 130 Weather Monitoring, Revision #1, dated 3/1/04	X							
AD 010, Corporate Policy Statement, Revision #2, dated 7/30/04	X							
AD 070 Materials Acceptance, Revision #3, dated 7/30/04	X							
Surety	X							Under revision

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DIAGRAMS AND/ OR MONITORING NOTES

Inventory to impoundment

Volumes to impoundment tracked by Joanne Ary. Air permit stuff through Mark Curry's spreadsheet. For dirt and rubble, she takes daily sheets and compiles them in a spreadsheet noting volume and area where placed in the Primary.

Material already in the impoundment that is being moved is tracked separately e.g, Munger Mesa.

So far:

CCDs: 168,545sf

Gind Leachconveyor... 55,252 sf

Old Mill Office and Elec Shops 213 fs

Pipe racks 13,169 sf

Primary Crusher Day Ore bin .. 7,027 sf

Secondary Crusher externals 7,871 sf

Interim cover on Secondary 339,736 tons of material

Mrack Curry's totals:

May 74,240 tons

June 68,625

July 33,274

August 11, 653

September 2,652

October 8002

November 0

December 4,292 tons

Red Hill Soils to date 21,760 cy

Schwardz soils 4,112 cy

Mungers Mesa 10,656

CCD footprint soils 8,060

Zirc foundation soils 12,483

1958 ore pad 29,891

ONGOING:

AS-210 Randy is pursuing petrographic analysis of road base material

Decommission schedule was due 6/13/11

Surface and Channel Hydraulics Analysis – due 5/27 in

Erosional Stability Analysis – due 5/27 in

Radon Emanation analysis – June 30

Cover infiltration analysis – June 30

Cover borrow material analysis – 6/30

Erosion Protection Material Analysis – 5/27 in

Technical Specs – July 29

Tailings dewatering plan – April 29

Settlement Monitoring plan – 5/27 in

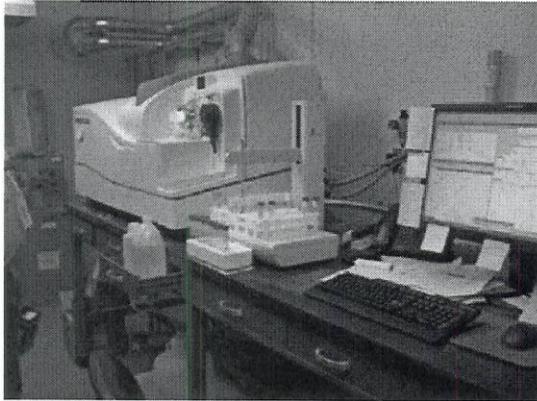
App A Nrc checklist – in

App c – in

Hydrology in

Bicron SN C791H, Cal Date- 4/13/09, bkg- 20 microrem/hr. Readings in microrem/hr. Bkg not subtracted.

ADDITIONAL COMMENTS	
	Last year's items all resolved, however the reclamation plan and decommissioning plan process has been slow to develop and may be a candidate for escalated enforcement if not rectified.
	Response to the pH of the impoundments is pending. This will involve some brainstorming with the licensee.
	The site remains in stand down. There has been no turnover in the core employee group. Large projects include demolition of the mill facility.
	They reported a small spill on 10/28/10 to us verbally, however upon review of the report it appears this was not a minor spill, but rather a release to the environment of uranium in solution at ~ 1.8 mg/L (ppm). The MCL is 30 ppb. Therefore, this is a violation of LC 8.6 and 14.1 The spill report is attached.
	Status of the LIMS system. Not working as well as it should, data is being entered multiple times. Discussed with P. Krauth
	Multiple redundancies in place to mitigate transcription errors. See IOC #2
	Emergency response review for all employees for each building demo project.
	Doses remain low. ALARA must be maintained during decommissioning activities to keep doses down.
	All in all, the program is effective and the licensee is trying to handle multiple challenges with core staff and local contractors.
	In addition to this inspection, Edgar and I have made numerous site visits this year. We brought NRC staff and managers for a tour in May, as well as EPA staff in June.
	RWPs being utilized and in place.
	877 – 6/11/10 – Redlar Conveyor eval
	878 – 8/9/10, 9/20/10 – U/V building tours
	879 – 10/13/10 Drums disposal, euxenite, Molu SX Vanadium into Primary Impoundment
	880 – 10/27/10 - Ore Handling baghouse, cat rail baghouse demo/disposal
	881 – 1/17/11 - Ore dust slurry tank, cat rail unloading demo
	882 – 1/13/11 – Movement of Colo Raffinate material at Munger Mesa in PI
	883 – 1/25/11 – Disposal of Amazon ore
	884 – 1/26/11 – U Product BBL Gauge removal and transport to storage
	885 – 2/24/11 – Cat Plant zirc ore soda ash drums disposal
	886 – 3/3/11 – U/V building selected equipment removal
	887– 5/24/11 U/V Product building tour



New ICPMS in lab with sample changer



Random fill on secondary impoundment



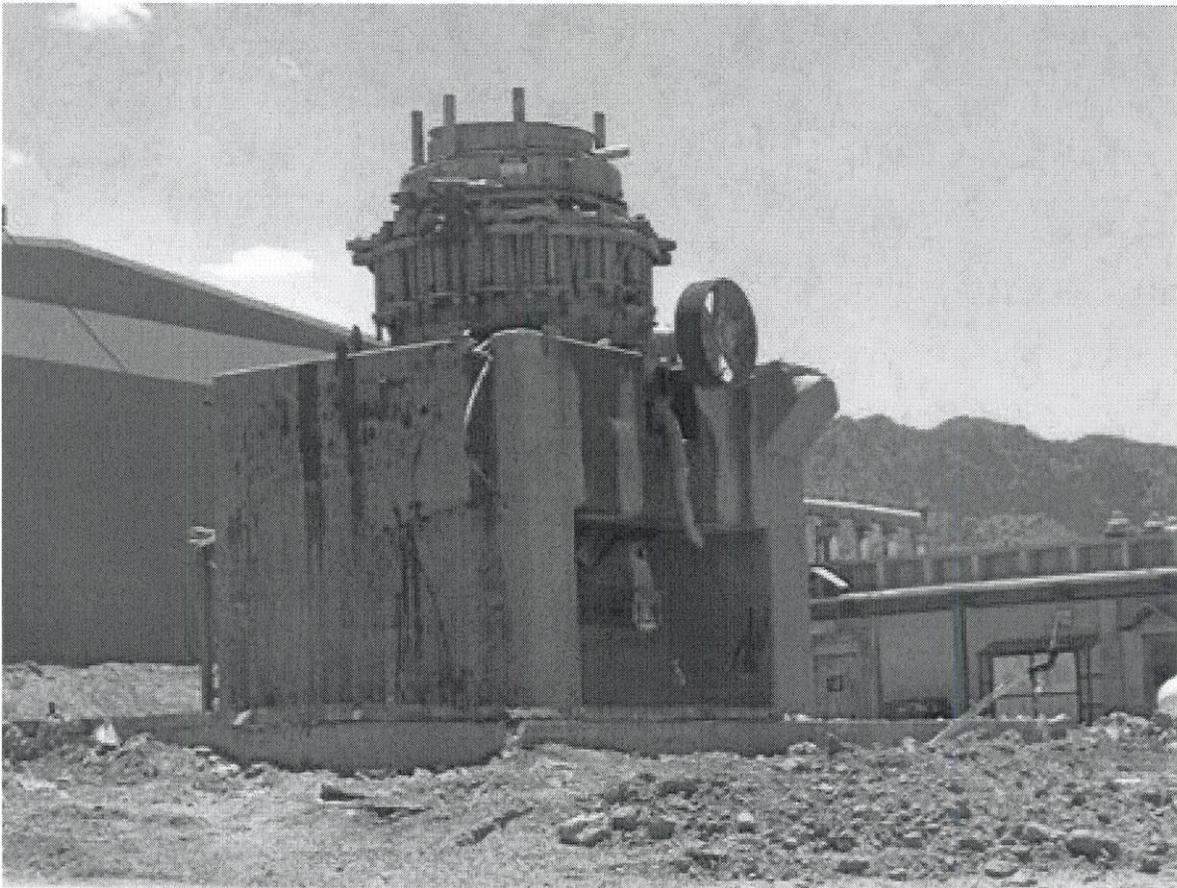
Primary impoundment showing decommissioning activities. Note clean fill on beaches, small pool and buried equipment in embankment.



Stainless tanks demo near secondary crusher



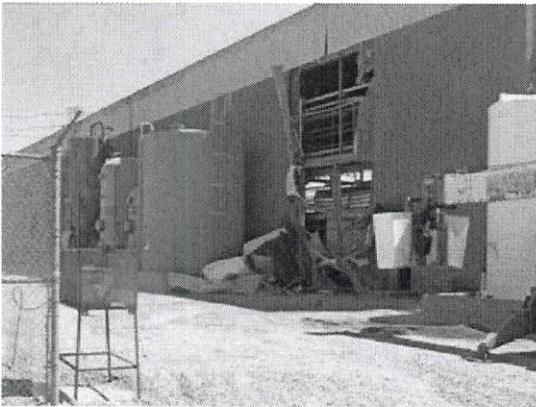
Grind and Leach Building foundation removal



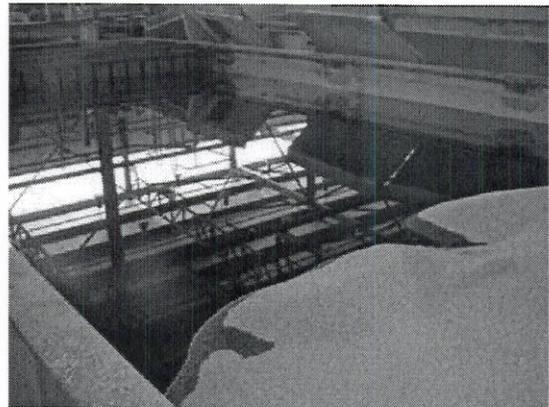
Secondary crusher foundation after building demo



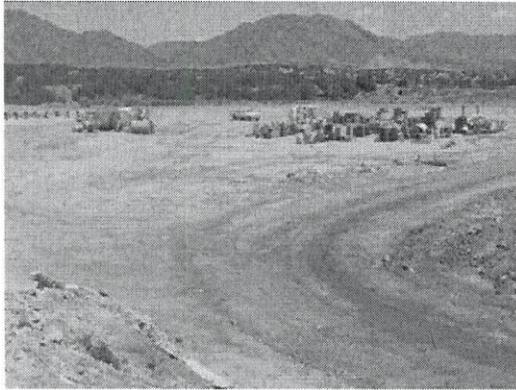
Grind and Leach Building foundation demolition



Portable air sampler outside SX building



Absorbent solidification project in SX building



Former CCD tank area



Former Vandium Product building area (to left).