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LOST CREEK ISR, LLC

January 06, 2012

Document Control Desk,
Director, Office of Federal and State Materials and Environmental Management Programs
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Re: Lost Creek Project,
NRC License SUA-1598, Docket No. 40-9068
Amendment Application for inclusion of Yellowcake Vacuum Drying

Dear Sir:

Lost Creek ISR, LLC hereby requests to amend Lost Creek ISR, LLC's NRC License SUA-1598 to include yellowcake vacuum drying as an option within its Central Processing Plant (CPP); and, subsequent shipment of vacuum dried yellowcake.

Historically, vacuum drying of yellowcake in in-situ recovery (ISR) has resulted in no measureable emissions to the environment, and NRC NUREG 1569, Section 7.3.1.2.2, maintains that dryer dust emissions will be negligible. We do not believe this license amendment will require any additional NEPA analysis since the GEIS (NUREG 1910) and the site specific SEIS (NUREG 1910 Supplement 3) have already reviewed the environmental impacts of the addition of a dryer system (See GEIS section 4.2.11.2 and throughout SEIS Chapter 4). NRC Form 313 is attached which submits a Vacuum Dryer Supplement for incorporation into the Lost Creek ISR, LLC Technical (TR) and Environmental Reports (ER) as previously supplemented by submittals listed in Administrative Condition 9.2 of the Lost Creek ISR, LLC., NRC License SUA-1598. This Vacuum Dryer Supplement addresses the minor facility and operational changes vacuum drying of yellowcake will entail.

To avoid numerous wording changes in the TR and ER, Lost Creek ISR, LLC requests that this amendment supersede all references to yellowcake production and shipment to include vacuum dried yellowcake. Any references to the project operating without a dryer are hereby amended to include the option of operating a vacuum dryer within the CPP. Where the dryer will potentially have an impact on operations, personnel safety, or the environment, the TR or ER are hereby supplemented.

Additionally, since the TR and ER were originally submitted, there have been numerous minor design changes throughout the Lost Creek ISR facility. Subsequent to the August 18, 2011 issuance of the Lost Creek ISR, LLC, NRC License SUA-1598, a Lost Creek ISR Safety and Environmental Review Panel has been duly established. This SERP has reviewed and approved all facility design changes submitted to date, including all design changes which have been incorporated into this Yellowcake Vacuum Dryer Amendment Application.

FSME20

Lost Creek Project,
NRC License SUA-1598, Docket No. 40-9068
Amendment Application for inclusion of Yellowcake Vacuum Drying

Please feel free to contact me at the above telephone number if you have any questions or require additional information.

Regards,

Steve Hatten
President
Lost Creek ISR, LLC

Cc: Theresa Horne – Ur-Energy USA Inc., Littleton

Deputy Director, Decommissioning and Uranium Recovery Licensing Directorate
Division of Waste Management and Environmental Protection
Office of Federal and State Materials and Environmental Management Programs
U.S. Nuclear Regulatory Commission
Mail Stop T-8F5
11545 Rockville Pike, Two White Flint North
Rockville, MD 20852-2738

NRC FORM 313 (3-2009) 10 CFR 30, 32, 33, 34, 35, 36, 39, and 40

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0120 EXPIRES: 3/31/2012

Estimated burden per response to comply with this mandatory collection request: 4.3 hours. Submittal of the application is necessary to determine that the applicant is qualified and that adequate procedures exist to protect the public health and safety. Send comments regarding burden estimate to the Records and FOIA/Privacy Services Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects.resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0120), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

APPLICATION FOR MATERIALS LICENSE

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

OFFICE OF FEDERAL & STATE MATERIALS AND
ENVIRONMENTAL MANAGEMENT PROGRAMS
DIVISION OF MATERIALS SAFETY AND STATE AGREEMENTS
U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555-0001

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:

IF YOU ARE LOCATED IN:

ALABAMA, CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, FLORIDA, GEORGIA, KENTUCKY, MAINE, MARYLAND, MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, NORTH CAROLINA, PENNSYLVANIA, PUERTO RICO, RHODE ISLAND, SOUTH CAROLINA, TENNESSEE, VERMONT, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO:

LICENSING ASSISTANCE TEAM
DIVISION OF NUCLEAR MATERIALS SAFETY
U.S. NUCLEAR REGULATORY COMMISSION, REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND APPLICATIONS TO:

MATERIALS LICENSING BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS, LOUISIANA, MISSISSIPPI, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, OR WYOMING, SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
612 E. LAMAR BOULEVARD, SUITE 400
ARLINGTON, TX 76011-4125

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S.NUCLEAR REGULATORY COMMISSION JURISDICTIONS.

1. THIS IS AN APPLICATION FOR *(Check appropriate item)*

- [ ] A. NEW LICENSE
- [x] B. AMENDMENT TO LICENSE NUMBER **SUA-1598**
- [ ] C. RENEWAL OF LICENSE NUMBER

2. NAME AND MAILING ADDRESS OF APPLICANT *(Include ZIP code)*

Lost Creek ISR, LLC
5880 Enterprise Drive, Suite 200
Casper, WY 82609

3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

Lost Creek Project in Sweetwater County, Wyoming, within the license area boundaries shown in Figure 1.3-1 of the approved license application

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Mr. John Cash

TELEPHONE NUMBER

(307) 265-2373

SUBMIT ITEMS 5 THROUGH 11 ON 8-1/2 X 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

5. RADIOACTIVE MATERIAL
a. Element and mass number; b. chemical and/or physical form; and c. maiximum amount which will be possessed at any one time.

6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.

7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE.

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.

9. FACILITIES AND EQUIPMENT.

10. RADIATION SAFETY PROGRAM.

11. WASTE MANAGEMENT.

12. LICENSE FEES *(See 10 CFR 170 and Section 170.31)*

FEE CATEGORY **2A(2)** AMOUNT ENCLOSED $

13. CERTIFICATION. *(Must be completed by applicant)* THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, 36, 39, AND 40, AND THAT ALL INFORMATION CONTANED HEREIN IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.

WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948 62 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

CERTIFYING OFFICER -- TYPED/PRINTED NAME AND TITLE	SIGNATURE	DATE
Mr. Steve Hatten, President of Lost Creek ISR, LLC		**01/06/2012**

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED	CHECK NUMBER	COMMENTS
			$		
APPROVED BY				DATE	

Vacuum Dryer Amendment Supplement
to the
Lost Creek ISR, LLC
Technical and Environmental Reports

Supplement to TR Section 1.5 Solution Mining Method and Recovery Process

This Amendment adds a Rotary Vacuum Yellowcake Drying process to the overall recovery process as a Dryer Circuit within the Central Processing Plant (CPP). The Dryer Circuit and drying process are described in detail below in the "Supplement to TR Section 3.0 Description of the Proposed Facility". Revised Technical Report (TR) Figure 1.5-2b (Revised Environmental Report (ER) Figure 1.2-6c) is attached to illustrate the amended process.

Supplement to TR Section 3.0 Description of the Proposed Facility

As described in TR Section 3.1, the original proposed design included three process circuits. This License Amendment adds a fourth process circuit , the Dryer Circuit, which will give Lost Creek ISR the option of producing as final product, dried yellowcake, and subsequently, the option of shipping dried yellowcake via US DOT approved containers directly to a conversion facility such as the one in Metropolis, Illinois. Revised TR Plate 3.1-1 (Revised ER Plate1.2-1) is attached to show the amended CPP layout including the Dryer Circuit. TR Section 3.3 is amended, as follows, to add the Dryer Circuit, following the Precipitation/Filtration Circuit, for the option of producing and shipping dried yellowcake.

Dryer Circuit

The preceding three processes in the plant culminate in the product having gone through a filter press to wash the impurities off the yellowcake slurry. When the wash stage is complete, the yellowcake will leave the filter press and go to a slurry vessel to await optional transport to an offsite facility that has drying capabilities. Alternatively, with the addition of a dryer circuit to the Lost Creek Plant, the yellowcake slurry will no longer have to leave the site to be dried. The yellowcake will leave the wash stage and go to the slurry storage vessel or directly to the dryer circuit (based on availability).

The Lost Creek Plant drying circuit will be comprised of up to two separate drying systems. This allows the plant operations department flexibility to vary the output of dried product in the case of increased production rates or changes in scheduled maintenance. The dryers will be a standard rotary vacuum design. The dryer room in the CPP will have its own ventilation system in order to prevent any dry yellowcake particulate from being circulated into other areas of the plant. The dryer circuit ventilation design provides the dryer room with negative pressure, forcing flow into the room. Vacuum dryers are designed to have no emissions. The attached "Dryer Flow Diagram" illustrates that the vacuum drawn through the dryer passes through a bag

filter, a condenser, vacuum pumps with a water seal and a condensate tank. There will not be a discharge stack associated with the dryers and final venting from the vacuum pump will be back into the dryer room.

Each dryer system will have the following equipment:

- Rotary Vacuum Dryer
- Air Filter
- Propane Fired Oil Heater
- Parallel Vacuum Pumps
- Condenser
- Packaging System

The two systems will share the following common equipment:

- Condensate Tank
- Cooling Tower
- Control System

Each rotary vacuum dryer will have a working capacity of approximately 110 cubic feet. This translates to a maximum dryer capacity of approximately 5,000 pounds of yellowcake per drying batch (or approximately 7 drums of final product). Each drying cycle is currently estimated to be between 10 and 12 hours. While the actual equipment has not been committed to yet, it is estimated that each dryer shaft will be run with a 20-50 horsepower motor at a speed less than 15 revolutions per minute.

All of the equipment installed in the drying circuit will have various instrumentation and readings that will be monitored through the control system. Each piece of equipment has specific operating parameters that will be monitored based on manufacturer's recommendations and to ensure safety. In general, the critical information for the drying circuit is vacuum pressure, steam temperature, oil pressure and oil temperature. If vacuum pressure declines below 10 inches Hg during the drying cycle, the control system will notify the operator. If the operator cannot address the loss of pressure and it falls below the primary minimum vacuum setting of 4 inches Hg, the oil heater will shut down. The loss of vacuum alarm will be tested and documented before drying each batch. The heater will also shut down if the oil pressure deviates from normal levels since this could indicate an oil leak or an obstruction in the line.

The basic operation of the dryer circuit will be as follows:

- Yellow cake slurry, consisting of between 40 and 70% solids, will enter the dryer through a feed line. The slurry will come from either a filter press or a yellowcake slurry vessel. The volume of slurry will not exceed 95% of the dryer capacity. The slurry line will be flushed after loading to prevent slurry from setting up in the line.
- The vacuum, which will be maintained during drying, is pulled through a filter that sits on top of the dryer. Any airborne uranium will be captured in the filter elements (the

elements will be bags, cartridges, or the equivalent). The differential pressure across the filter will be monitored. As the differential pressure changes, it will indicate that the filter elements are being clogged with the airborne uranium and the operator will clean or replace the elements.

- During the drying cycle, the vacuum pressure, steam temperature, oil temperature and the level of the condensate tank will be monitored and plotted against drying time to assist in tracking drying progress.
- Once a vacuum level of 10 inches (in) Hg has been reached, the oil heater will begin sending the hot (thermal) oil to the dryer. The heat applied to the dryer is through a hot oil recirculation system. The hot oil is pumped through the jacket (outside) of the dryer and back to the oil heater. An optional heating system, which may also be installed, includes pumping the hot oil through the rotating shaft and arms.
- The start of the oil heating system will also trigger the start of the cooling water system. The cooling water system is in place to condense the steam that comes out of the dryer into water before it goes into the condensate tank.
- Once the drying cycle is complete, the yellowcake will be allowed to cool before being loaded into DOT approved steel drums. The dryness of the product will be determined from monitoring drying time, temperature, and changes in vacuum.
- The dryer operator will load the yellowcake into 55 gallon drums through the use of a sealing valve/metering valve system on the bottom of the dryer. Each drum will be placed underneath a hood and the air lock system will "seal" the dryer discharge hood against the drum. The sealing valve is then opened to allow product to leave the dryer and drop into the drum through the use of a metering valve. Each dryer load will fill between 4 and 7 drums depending on the solid content of the slurry.
- Full drums are removed by closing the metering valve and lowering the drum from the hood. Point source ventilation will be used to control any dust when the "seal" between the drum and the hood is broken.
- Full drums are then allowed to cool for a minimum of 4 additional hours before being sealed. The drums will be in good condition with no penetrations or significant dents with sharp angles. The drum lids will have gaskets in good condition.
- Sealed drums will be carefully washed and inspected before being moved to the drum storage area outside the dryer room.

The drying process will be conducted in accordance with the checking and logging safety requirements contained in 10 CFR Part 40, Appendix A, Criterion 8, and will include installation of appropriate yellowcake dryer condition alarms.

Supplement to TR Section 4.1.2.1 Particulates

As discussed in NUREG/CR-6733, the highly improbable, but significant accidents involving a yellowcake rotary vacuum dryer could potentially have much more serious consequences than

those situations involving wet yellowcake slurry as addressed in this TR Section 4.1.2.1. However, the NUREG/CR-6733 (4.2.4) fire and explosion analysis maintains that doses to the public from dryer accidents will remain below the 100 mrem/yr public dose limit for normal operations; although they could exceed the 10 mrem/yr constraint on air emissions of radioactive material to the environment in 10 CFR 20.1101, which represents a reportable event under 10 CFR 20.2203.

Airborne concentrations resulting from the yellowcake dryer accident scenarios analyzed in NUREG/CR-6733 could result in doses to workers far in excess of occupational and toxicity limits. To prevent this possibility, a number of operational requirements will be in place for LC ISR, LLC. These include:

- incorporating the checking and logging requirements contained in 10 CFR Part 40, Appendix A, Criterion 8, which will include installation of appropriate yellowcake dryer condition alarms including:

    - Low vacuum alarm
    - High oil temperature alarm
    - Low and high oil pressure alarm
    - Furnace failure alarm

- continuously monitoring and logging the following parameters when the dryer is in operation and during packaging:

    - Vacuum level
    - Thermal oil temperature
    - Steam temperature

    (The system will be designed so that the low vacuum alarm will activate if the vacuum falls below 10 in Hg. The furnace will automatically shut off if the vacuum falls below 4 in Hg. After a low vacuum shut-down, the furnace will require manual restart when the vacuum is re-established at greater than 4 in Hg.)

- developing and training crews on an emergency plan for such accidents

- following manufacturer's recommendations for maintenance and operation of the dryers

- requiring use of respirators in the Dryer Room during and after packaging and until such time air quality samples confirm airborne concentrations of uranium are below limits and ALARA.

Parameters important to the effective operation of the dryer must be monitored, and existing

NRC regulations at 10 CFR Part 40, Appendix A, Criterion (8), prohibit dryer operations when these parameters are outside prescribed ranges (NUREG/CR-6733, p2-9, "This process captures virtually all escaping particles.")

Supplement to TR Section 5.7.3 In-Plant Airborne Radiation Monitoring Program

The provisions of this TR Section 5.7.3 are applicable, in general, to ISR operations regardless of whether or not yellowcake rotary vacuum drying is present. The drying process will only entail an expanded application of the provisions of this TR Section and the NRC guidance documents cited therein.

The dryer room will be posted as an airborne radiation area during and after packaging and until such time that the Health Physics staff has inspected the room to verify that it has been adequately washed down and can demonstrate by air quality measurements that the airborne concentration of uranium is less than the W class DAC for U-238. (A lower or higher ALARA airborne concentration standard may be set by the RSO depending on conditions).

During all packaging operations the operator will wear a breathing zone sampler to determine the potential for exposure.

Supplement to TR Section 5.7.6.2 In-Area Surveys

TR Section 5.7.6.2 is expanded to include the yellowcake drying area as one of the survey areas of concern where work with uranium is performed.

Supplement to TR Section 5.7.10 Respirators

This TR Section specifies that administrative and engineering controls will be maximally applied to reduce need for use of respirators to "a last line of defense against airborne particulates." However, as discussed previously in the Supplement to TR Section 4.1.2.1, due to the potentially severe inhalation consequences of a dryer accident, workers will be required to wear respiratory protection while in the rotary vacuum dryer room of the CPP unless air quality sampling confirms airborne concentrations of uranium are below standards and are ALARA. Administration of the respiratory protection program will be in accordance with the provisions of this TR Section.

Supplement to TR Section 5.8 Transport of Radioactive Materials

This TR Section is completely inclusive of the risks and mitigating actions associated with

shipment of dried yellowcake, and is hereby only supplemented to confirm optional shipment of dried yellowcake from the Lost Creek ISR to a conversion facility.

Supplement to TR Section 7.4.7 Transportation Accidents

NUREG/CR-6733 documents the annual risk as 11% of a transportation accident associated with shipments to a conversion plant in Illinois of dried yellowcake from a Wyoming ISR facility producing 1.3 million pounds of yellowcake per year. This TR Section currently includes discussion of the potential doses associated with such a dried yellowcake accident. Risk mitigation and cleanup of any yellowcake accident will be in accordance with the provisions of this TR Section.

Supplement to TR Section 7.4.8 Other Accidents

As discussed in the preceding "Supplement to TR Section 4.1.2.1 Particulates" the accident analysis presented in NUREG/CR-6733 establishes that doses to the public from dryer accidents will remain below the 100 mrem/yr public dose limit for normal operations; although they could exceed the 10 mrem/yr constraint on air emissions of radioactive material to the environment in 10 CFR 20.1101, which represents a reportable event under 10 CFR 20.2203. The material in TR Section 7.4.8.1 is supplemented with this information to support the presence of a rotary vacuum dryer within the CPP of the Lost Creek ISR Project.

Supplementing TR Section 7.4.8.2, NUREG/CR-6733 establishes that the consequences of damage to an ISR facility from a tornado are bounded by those from a yellowcake dryer explosion as was also discussed in the preceding "Supplement to TR Section 4.1.2.1 Particulates".

Supplement to ER Section 1.2.2.2 ISR Operations

This Vacuum Dryer Amendment hereby adds a dryer circuit to the CPP design and plant operations. The dryer circuit supplement for this ER Section is provided above in "Supplement to TR Section 3.0 Description of the Proposed Facility". Revised TR Figure 1.5-2b is attached to show the amended CPP process including the dryer circuit. Thus Revised TR Figure 1.5-2b supersedes ER Figure 1.2-6c. Revised TR Plate 3.1-1 is attached to show the amended CPP layout including the dryer circuit. Thus Revised TR Plate 3.1-1 supersedes ER Plate 1.2-1.

Supplement to ER Section 2.2 Alternatives

Shipment of dried yellowcake could be considered as a separate alternative to those considered

in this section. However, the advantages of shipping slurry over shipping loaded resin have been examined in this section and those advantages are enhanced even more so by shipping dried yellowcake. There are no added disadvantages to shipping dried yellowcake.

Supplement to ER Section 4.2.1.2 Shipments of Yellowcake Slurry from On-Site Facilities to an Off-Site Dryer

This ER Section currently not only analyzes the impacts of shipment of yellowcake slurry, but also compares those impacts to impacts of shipment of dried yellowcake. For additional comparison, NUREG/CR-6733 determines an 11% annual accident rate for dried yellowcake shipments from Wyoming ISRs, producing up to 1.3 million lb, to the conversion plant in Illinois. With this additional comparison, this ER Section is applicable to shipments of both yellowcake slurry and dried yellowcake.

ATTACHMENTS

Revised TR Figure 1.5-2b (Revised ER Figure 1.2-6c) Plant Process Flow
Revised TR Plate 3.1-1 (Revised ER Plate 1.2-1) Site Layout
Section 3.3 Supplemental Dryer Flow Diagram
Revised TR Figure 5.7-1 Locations of In-Plant Radiological Sampling

From Ion Exchange Recovery Circuit

Loaded Resin

Resin Screens

Future

Resin Trailer (to/from Satellite Plant)

Loaded Resin

Eluate

Resin Elution Vessels

Rich Eluate

Intermediate Eluate

Fresh Eluant

Fresh Water

Salt

Soda Ash

Permeate

To Ion Exchange Recovery Circuit

Stripped Resin

Rich Eluate

Recycle Eluate

Hydrogen Peroxide

Caustic Soda

Hydrochloric Acid

Precipitation Tank

Yellowcake Precipitate

Filter Press

Hopper

Auger

Yellowcake Slurry

Vacuum Dryer

Dry Yellowcake

Dry Yellowcake Shipments

Yellowcake Slurry Storage Tank

Yellowcake Slurry Truck

Optional Slurry Transport

Lost Creek ISR, LLC
Littleton, Colorado USA

AATA INTERNATIONAL, INC.
Fort Collins, Colorado, USA

FIGURE 1.5-2b
Plant Process Flow
Lost Creek Permit Area

Issued For: NRC TR 1.0 Drawn By: CLB

Issued / Revised: 12.5.2011

Drawing No. NRCTR 1.0 FIG 1.5-2b 12.5.2011 CLB

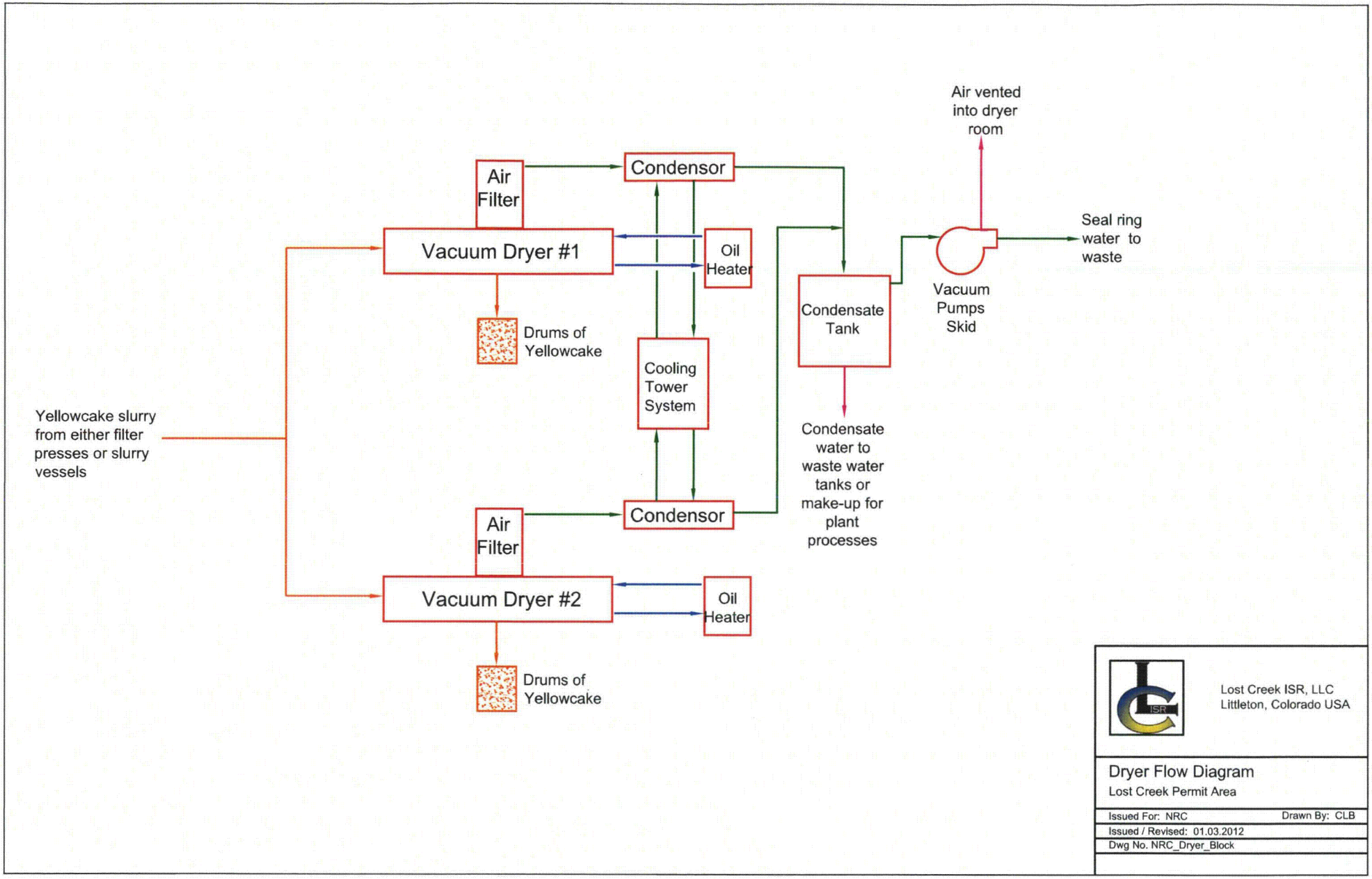
THIS PAGE IS AN OVERSIZED DRAWING OR FIGURE,

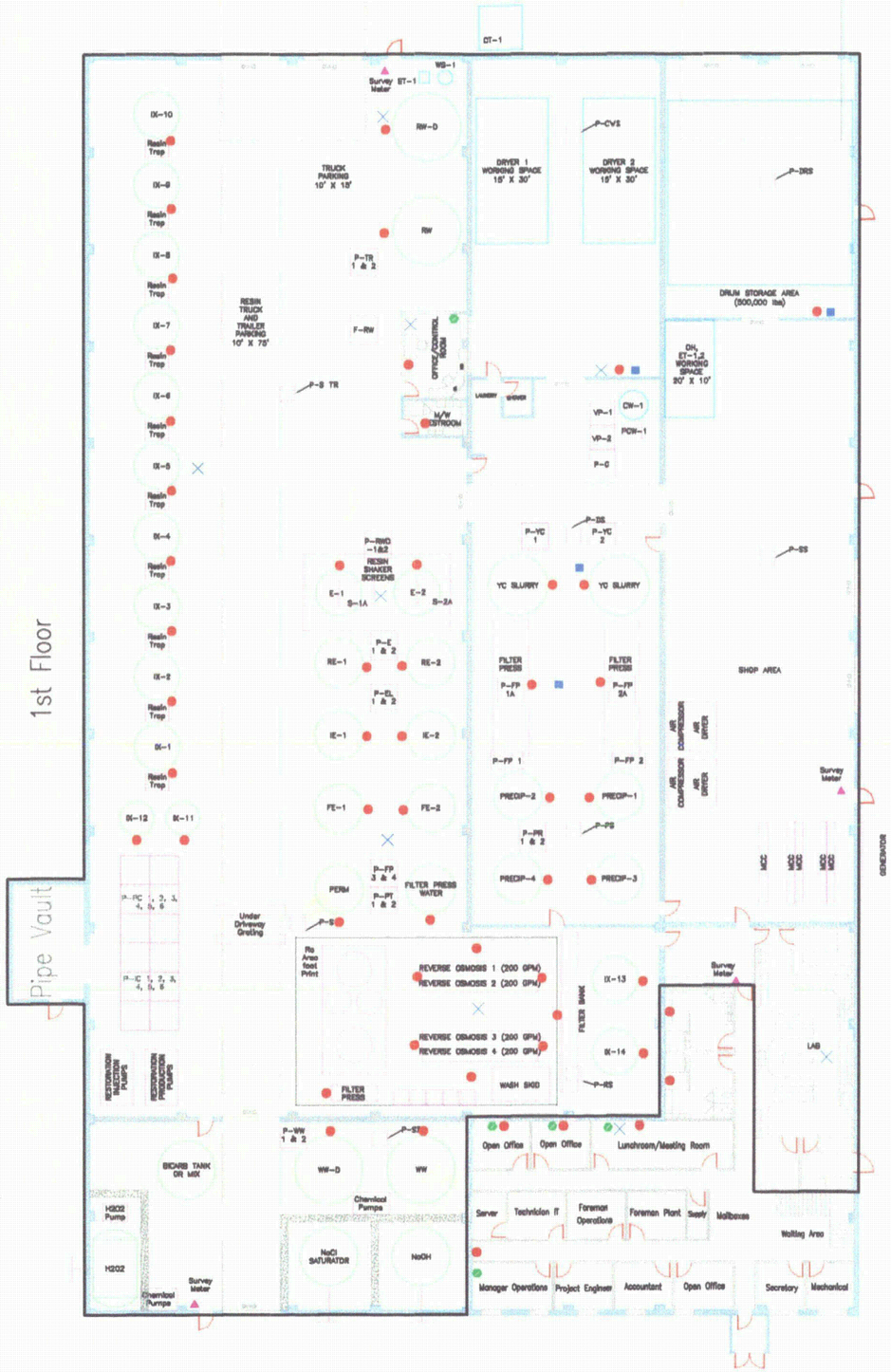
THAT CAN BE VIEWED AT THE RECORD TITLED:

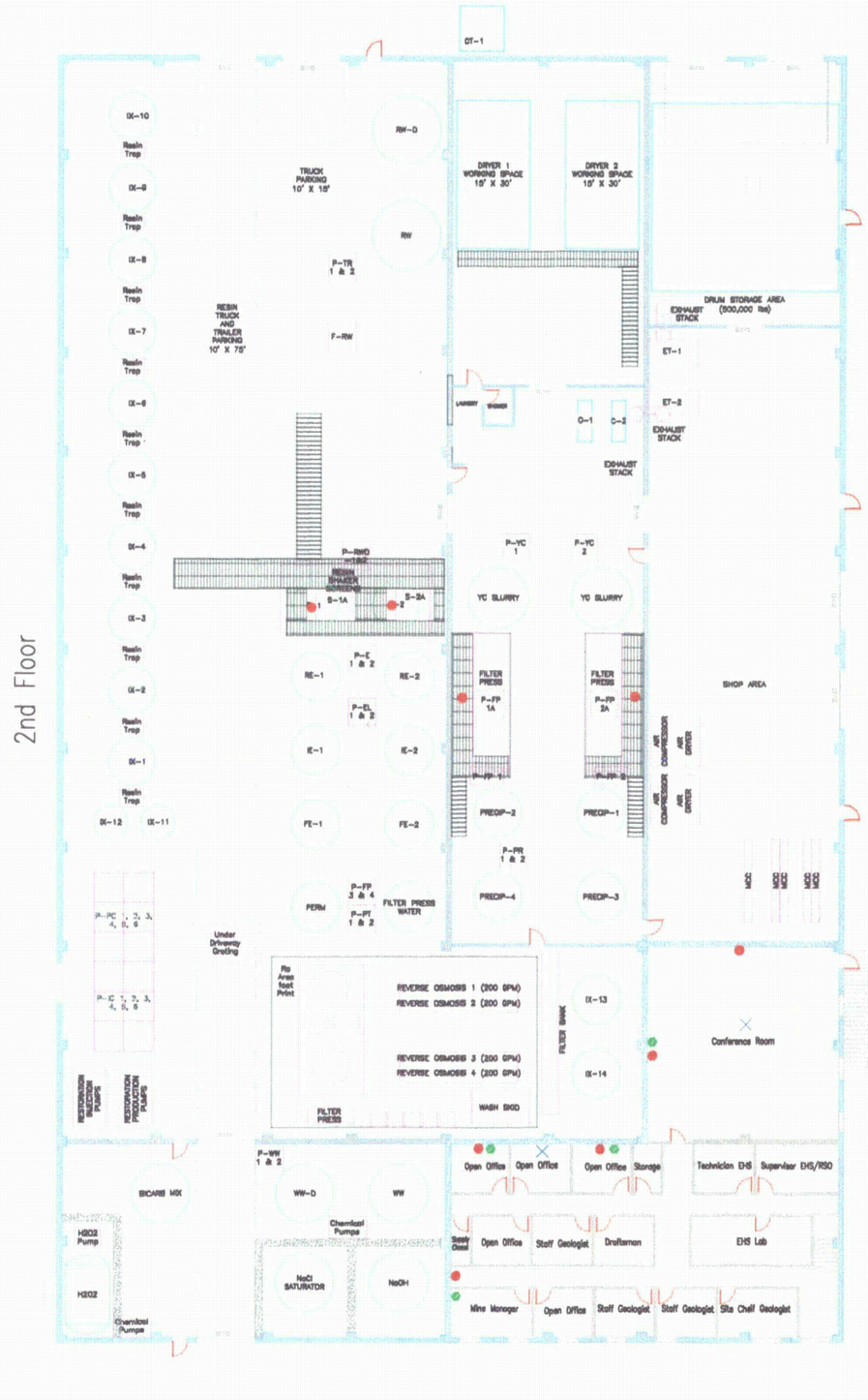
PLATE 3.1-1
SITE LAYOUT
(LOST CREEK PERMIT AREA)

WITHIN THIS PACKAGE

D-01


Air vented into dryer room
Air Filter
Condensor
Vacuum Dryer #1
Oil Heater
Seal ring water to waste
Vacuum Pumps Skid
Condensate Tank
Drums of Yellowcake
Cooling Tower System
Yellowcake slurry from either filter presses or slurry vessels
Condensate water to waste water tanks or make-up for plant processes
Air Filter
Condensor
Vacuum Dryer #2
Oil Heater
Drums of Yellowcake
Lost Creek ISR, LLC
Littleton, Colorado USA
Dryer Flow Diagram
Lost Creek Permit Area
Issued For: NRC
Drawn By: CLB
Issued / Revised: 01.03.2012
Dwg No. NRC_Dryer_Block





Legend

Radiological Sampling Locations

- Direct Gamma Sampling Location
- Rn-222 Daughter Survey
- Airborne Uranium Particulate Sampling Location
- Personal Survey Meters
- Gamma Dosimeter
- Approximate Boundary of Restricted Area

Lost Creek ISR, LLC
Littleton, Colorado USA

FIGURE 5.7-1
LOCATIONS OF IN-PLANT RADIOLOGIC SAMPLING

Lost Creek Permit Area

Issued For: NRC TR	Drawn By: CLB
Issued / Revised: 1.3.2012	
Dwg No. NRC-TR-5.7-1-01-03-11-CLB	