



MDEQ Progress Meeting

May 7, 2014

TCE Plume – Impact on Groundwater

Antrim County Michigan



ACUTE

March 14, 2014

Antrim County United Through Ecology*

Robert Wagner, Chief
DEQ-Remediation & Redevelopment Division
Lansing, MI 48909-7926

Re: TCE plume, supporting documentation to upgrade public water system

The purpose of this letter is three fold (1) For the undersigned stakeholder organizations to express their appreciation to you and to DEQ's Remediation staff in Gaylord for their ongoing surveillance and community engagement to help address this huge trichloroethylene (TCE) groundwater contamination plume, and (2) to provide the following documentation and rationale for spending up to \$5.7 million to upgrade the Mancelona area public water system in a manner that ensures no TCE-contaminated public drinking water in this region of Antrim County for the foreseeable future, and (3) to encourage DEQ's ongoing leadership and collaboration in searching for practicable strategies to remediate portions of this TCE plume.

1. Five construction projects and cost estimates to fix the public water system:

In 2011, the State of Michigan appropriated \$300,000 for a preliminary engineering study to replace the Cedar River Well Field. It was believed that the groundwater plume of trichloroethylene (TCE) could contaminate a major source of drinking water for the Mancelona Area public water system. The most recent findings from that study have lead to a path forward to mitigate this ongoing problem in a comprehensive and long-term manner; estimated cost of \$5.7 million. **Attachment A** itemizes the details for your consideration. The process used to develop this solution involved local stakeholders working side by side with state officials.

2. This TCE plume represents a significant potential economic threat to Shanty Creek Resort. **Attachment B** is a synopsis of that potential economic impact on Shanty Creek Resort, which is Antrim County's primary employer. Shanty Creek Resort is also a prime destination location for *Pure Michigan* visitors seeking a wide range of desirable outdoor recreational & resort opportunities including golfing, skiing, boating, hiking and fishing.

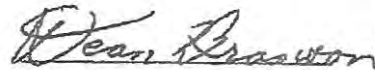
3. **Attachment C** describes the economic impact that this TCE plume is currently having, and could potentially have on property values and the corresponding tax-based revenue for Antrim County and Custer Township. This impact is based primarily on the uncertainty associated with a lack of confidence in any long-term assurance of safe drinking water in the affected area. This lack of confidence is based on an underlying perception of potential property owners regarding piece-meal solutions to this problem.


4. **Attachment D** is a package of Letter of Support for improving the public water system.

* ACUTE is an informal network of community, consensus building stakeholder organizations.


Respectfully submitted by the undersigned,


Gary Knapp
ACUTE Coordinator



Dean Branson
Three Lakes Association


Steve Grill, Leader
Property Owners' Associations


Pete Bigford, COO
Shanty Creek Resort


Mike Crawford, Chairman
Antrim County Commissioners

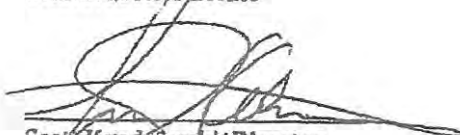

Dave Howelmark
Antrim County Commissioner

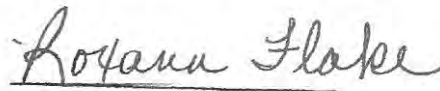

William Koenig, President
Mancelona Area Water & Sewer Authority


David Schulz, President
Village of Bellaire


Bob Edwards
BluNorth Real Estate


Mike Griffin
Coldwell Banker-Real Estate


Scott Kenzierski, Director
NW Michigan Health Department


Roxanne Flake, Supervisor
Custer Township

Cc: Representative Greg MacMaster, 105th District
Janice Adams, DEQ-Remediation Division
Joe Elliott, Gourdie-Fraser Engineering

* ACUTE is an informal network of community, consensus building stakeholder organizations.



TCE Plume Impact on Water Supply – Funding					
	Description of Project	2014 Budget	2015/2016 Budget	Future Phases	Total
A	Water tank & booster <ul style="list-style-type: none"> • Design • Construction • Const. Eng. 	\$ 118,000 \$1,182,000 \$ 59,000			\$1,359,000
B	Water supply wells <ul style="list-style-type: none"> • Design • Construction • Const. Eng. 		\$ 40,000 \$446,000 \$ 27,000		\$513,000
C	Watermain connection to Cedar River Well Field <ul style="list-style-type: none"> • Preliminary Design/Topo • Final Design • Construction • Const. Eng. 	\$ 126,000 \$1,346,000 \$ 76,000			\$1,548,000
D	Watermain to connect Shanty Creek System to MAWSA Water System			\$531,000	\$531,000
E	Watermain extensions to serve impacted residential wells-Shanty Creek Area			\$1,367,500	\$1,367,500
F	Watermain to connect Chief condos to MAWSA			\$375,000	\$375,000
Total		\$2,907,000	\$513,000	\$2,273,500	\$5,693,500



	Potential Funding Opportunities	2014 Budget	2015/2016 Budget	Future Phases	Total
Needed		\$2,907,000	\$513,000	\$2,273,500	\$5,693,500
	MDEQ				
	MEDC, Community Development Block Grants				
	USDA Grants				
	EDA Funds				
	USDA Loan Funds <ul style="list-style-type: none"> • User Fees • Benefit Fees/Hookups • Special Assessment 				
	Other possible sources: <ul style="list-style-type: none"> • 				
	Total				\$5,693,500

"A"

OPINION OF PROBABLE CONSTRUCTION COSTS
for
WATER STORAGE TANK AND BOOSTER STATION
AT CEDAR RIVER WELLS

Prepared by Gourdie-Fraser, Inc.
Updated 02/24/2014

No.	Item	Qty	Unit	Unit Price	Item Cost
1	450,000 gallon Concrete Ground Water Storage Tank	1	LS	750,000.00	750,000.00
2	Booster Station (2 Domestic and 1 Fire Pump)	1	LS	200,000.00	200,000.00
3	Emergency Generator	1	LS	60,000.00	60,000.00
4	Site Work				
	Earthwork/Grading	1	LS	20,000.00	20,000.00
	Piping	1	LS	15,000.00	15,000.00
	Paving	1	LS	20,000.00	20,000.00
	Restoration, Seeding, Etc	1	EA	10,000.00	10,000.00
SUB-TOTAL					\$1,075,000.00
10% CONTINGENCY					\$107,000.00
ENGINEERING, ADMINISTRATIONS, CONSTRUCTION SERVICES					\$177,000.00
STORAGE TANK AND BOOSTER STATION TOTAL					\$1,359,000.00

- Serves 1,500 users of the existing system located in Mancelona and Custer Townships, for storage needs.
- Serves to reduce CRW pumping to reduce risk of TCE impact to 1,500 existing users.
- Would serve future Shanty Creek (650 users), Chief (40 users) and residential users (200 lots)
- This cost estimate is approximate. Actual construction bids may vary significantly from this statement of probable costs due to timing of construction, changed conditions, labor rate changes, or other factors beyond the control of Gourdie-Fraser.
- These costs are based on preliminary information. The actual site conditions may result in variations of unit prices or items.

"B"

OPINION OF PROBABLE CONSTRUCTION COSTS

for

WATER SUPPLY WELL AT MANCELONA

Prepared by Gourdie-Fraser, Inc.

Updated 02/24/2014

No.	Item	Qty	Unit	Unit Price	Item Cost
1	Install New Well - (1) 500 gpm well, 40 hp, 200' depth including pump/motor	1	LS	80,000.00	80,000.00
2	Mechanical well house, piping and suply piping from well	1	LS	50,000.00	50,000.00
3	Wellhouse Structure - masonry, 300 sf	1	LS	50,000.00	50,000.00
4	Chemical Treatment System (Chlorine)	1	LS	15,000.00	15,000.00
5	Electrical Service to Site	1	LS	15,000.00	15,000.00
6	Electrical/Controls at Wellhouse	1	LS	25,000.00	25,000.00
7	Generator Set	1	LS	60,000.00	60,000.00
8	Sitework				
	Grading	1	LS	15,000.00	15,000.00
	Paving/Surfacing	1	LS	20,000.00	20,000.00
	Water Main to connect (1,500')	1,500	LF	50.00	75,000.00
SUB-TOTAL					\$405,000.00
10% CONTINGENCY					\$41,000.00
ENGINEERING, ADMINISTRATIONS, CONSTRUCTION SERVICES					\$67,000.00
WATER SUPPLY WELL TOTAL					\$513,000.00

- Would serve existing users in Mancelona & Custer Township in the event that CRWF either is contaminated or has pumping reduced.
 - Would serve future Shanty Creek (650 users), Chief (40 users) and residential users (200 lots)
This cost estimate is approximate. Actual construction bids may vary significantly from this statement of probable costs
 - due to timing of construction, changed conditions, labor rate changes, or other factors beyond the control of Gourdie-Fraser.
- These costs are based on preliminary information. The actual site conditions may result in variations of unit prices or items.

"C"

OPINION OF PROBABLE CONSTRUCTION COSTS
for
WATER MAIN TO CONNECT MANCELONA WATER SUPPLY
TO CEDAR RIVER TANK

Prepared by Gourdie-Fraser, Inc.
Updated 02/24/2014

No.	Item	Qty	Unit	Unit Price	Item Cost
1	Water Main, 12" (open cut)	17,000	LF	50.00	850,000.00
2	Water Main, 12" (directionally drilled)	1,500	LF	150.00	225,000.00
3	Gate Valves, 12"	15	EA	1,500.00	22,500.00
4	Connect to Existing 12" Water Main	4	EA	2,000.00	8,000.00
5	Fire Hydrant Assembly	25	EA	2,500.00	62,500.00
6	Restoration	1	LS	50,000.00	50,000.00
7	Individual Water Service PRV's	10	EA	500.00	5,000.00
SUB-TOTAL					\$1,223,000.00
10% CONTINGENCY					\$123,000.00
ENGINEERING, ADMINISTRATIONS, CONSTRUCTION SERVICES					\$202,000.00
CONNECT MANCELONA TO CEDAR RIVER TANK TOTAL					\$1,548,000.00

- Would serve future wells impacted by migrating TCE plume in Kearney & Custer Townships
- Would serve future Shanty Creek (650 users), Chief (40 users) and residential users (200 lots) that may be impacted in the future.
- This cost estimate is approximate. Actual construction bids may vary significantly from this statement of probable costs due to timing of construction, changed conditions, labor rate changes, or other factors beyond the control of Gourdie-Fraser.
- These costs are based on preliminary information. The actual site conditions may result in variations of unit prices or items.

"D"

OPINION OF PROBABLE CONSTRUCTION COSTS
for
WATER MAIN TO CONNECT
SHANTY CREEK (WATARS) SYSTEM TO MAWSA

Prepared by Gourdie-Fraser, Inc.

Updated 02/24/2014

No.	Item	EST Qty	Unit	Unit Price	Item Cost
1	Water Main, 12"	6,000	LF	50.00	300,000.00
2	Gate Valves, 12"	10	EA	1,500.00	15,000.00
3	Pressure Reducing Station	1	EA		0.00
4	Connect to Existing Main	2	EA	2,000.00	4,000.00
5	Fire Hydrant Assembly	16	EA	2,500.00	40,000.00
6	Restoration				
	Pavement	1	LS	40,000.00	40,000.00
	Turfing	1	LS	20,000.00	20,000.00
SUB-TOTAL					\$419,000.00
10% CONTINGENCY					\$42,000.00
ENGINEERING, ADMINISTRATIONS, CONSTRUCTION SERVICES					\$70,000.00
WATER MAIN TO CONNECT TOTAL					\$531,000.00

- Would reduce CRWF pumping to reduce risk of TCE Plume
- Would serve 680 existing users in the north end of the MAWSA System in Custer & Kearney Townships
- Would serve future Shanty Creek (650 users), Chief (40 users) and residential users (200 lots) that may be impacted in the future.
This cost estimate is approximate. Actual construction bids may vary significantly from this statement of probable costs due to timing of construction, changed conditions, labor rate changes, or other factors beyond the control of Gourdie-Fraser.
- These costs are based on preliminary information. The actual site conditions may result in variations of unit prices or items.

"E"

OPINION OF PROBABLE CONSTRUCTION COSTS
for
WATER MAIN TO SERVE RESIDENTIAL LOTS CURRENTLY
ON INDIVIDUAL WELLS LOCATED BETWEEN
CRWF AND SHANTY CREEK SYSTEM

Prepared by Gourdie-Fraser, Inc.

Updated 02/24/2014

No.	Item	Qty	Unit	Unit Price	Item Cost
1	Water Main, 8"	10,000	LF	40.00	400,000.00
2	Gate Valves, 8"	12	EA	1,500.00	18,000.00
3	Connect to Existing Main	8	EA	2,000.00	16,000.00
4	Fire Hydrant Assemblies	25	EA	2,500.00	62,500.00
5	Restoration	1	LS		0.00
6	1" Water Service Connection to ROW	150	EA	1,500.00	225,000.00
7	Abandon Residential Well	60	EA	1,500.00	90,000.00
8	1" Water Service Connection ROW to House	60	EA	4,500.00	270,000.00
SUB-TOTAL					\$1,081,500.00
10% CONTINGENCY					\$108,000.00
ENGINEERING, ADMINISTRATIONS, CONSTRUCTION SERVICES					\$178,000.00
WATER MAIN TO SERVE RESIDENTIAL LOTS TOTAL					\$1,367,500.00

- Would serve only 200 ± residential lots if and when their wells become contaminated. Installation of Segment "D" is required prior to these mains being constructed. Users are in Kearney & Custer Townships.
- This cost estimate is approximate. Actual construction bids may vary significantly from this statement of probable costs due to timing of construction, changed conditions, labor rate changes, or other factors beyond the control of Gourdie-Fraser.
- These costs are based on preliminary information. The actual site conditions may result in variations of unit prices or items.

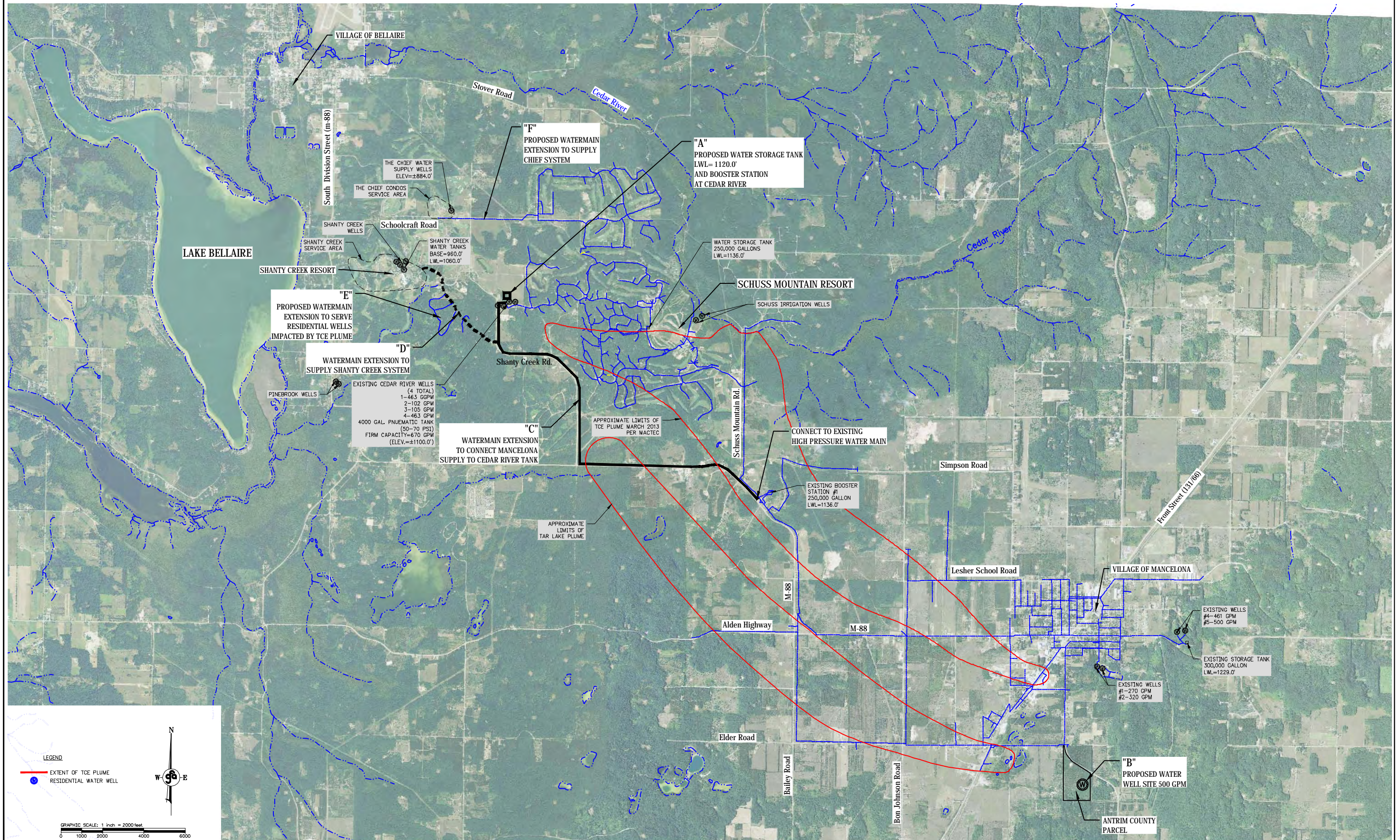
"F"

OPINION OF PROBABLE CONSTRUCTION COSTS
for
WATER MAIN TO CONNECT
"CHIEF CONDOMINIUMS" SYSTEM TO MAWSA
Prepared by Gourdie-Fraser, Inc.
Updated 02/24/2014

No.	Item	Qty	Unit	Unit Price	Item Cost
1	Water Main, 12"	4,500	LF	50.00	225,000.00
2	Gate Valves, 12"	6	EA	2,000.00	12,000.00
3	Connect to Existing 12" Water Main	2	EA	2,000.00	4,000.00
4	Fire Hydrant Assembly	10	EA	2,500.00	25,000.00
5	Restoration	1	LS	30,000.00	30,000.00
SUB-TOTAL					\$296,000.00
10% CONTINGENCY					\$30,000.00
ENGINEERING, ADMINISTRATIONS, CONSTRUCTION SERVICES					\$49,000.00
CONNECT MANCELONA TO CEDAR RIVER TANK TOTAL					\$375,000.00

- This main serves specifically the Chief Condominiums and would be required if and when the Chief wells are impacted by the TCE Plume. All users are in Kearney Township.
- This cost estimate is approximate. Actual construction bids may vary significantly from this statement of probable costs due to timing of construction, changed conditions, labor rate changes, or other factors beyond the control of Gourdie-Fraser.
- These costs are based on preliminary information. The actual site conditions may result in variations of unit prices or items.

OVERALL WATER SYSTEM MAP SHOWING PROPOSED WATER SYSTEM IMPROVEMENTS





Economic Impact - Shanty Creek Resorts – Updated March 15, 2014

The owners and employees of Shanty Creek resorts, along with the owners of property in and around the resort are concerned about the impact of the TCE plume on the economy of Antrim County and the surrounding area. This document summarizes the economic impact of the resort on the region.

In 2007, Trinidad Resort & Club LLC purchased Shanty Creek Resort out of foreclosure. Since that time, Trinidad has invested over \$15,000,000 in capital improvements including massive building renovations, facility improvements, snowmaking upgrades etc... Trinidad's investment is turning the resort around and has strengthened its position as **Antrim County's most significant economic engine.**

Revenue and Taxes

The Resort generates \$16 million in revenue each year. In 2013 Shanty Creek paid \$226K in sales tax, \$269K in use tax, \$274K in property tax and \$52K in personal property tax.

Payroll and Other Expenses

The resort employs 600 people each year and spends millions of dollars in the local economy:

Direct Payroll	\$5,500,000
Payroll Taxes & Benefits	\$1,700,000
Purchase goods for resale	\$2,540,000
Other expenses (does not include depreciation)	\$4,486,000
Average Capital Improvements	\$1,250,000
Annual Total	\$15,476,000



Multiplier Effect

Time did not allow for an independent economic impact analysis. It is clear however, that many of the businesses in Bellaire and the region depend on a Shanty Creek Resort to attract visitors into the region.

Timing

It is imperative that funds be appropriated to address the TCE Plume as quickly as possible. In this day of social media, the mere rumor of well contamination could cause devastating economic impacts.

Other Notes:

37,500 room nights in Resort lodging alone

15,000 room nights in independent lodging around the Resort

65,000 golf rounds on Resort courses

15,000 golf rounds on other local courses

90,000 skier days

\$150,000 + in goods and services donated to local/regional causes each year

\$60K in 401K matching funds

Respectfully submitted,

Peter W. Bigford
COO
Shanty Creek Resorts

March 17, 2014

To: Robert Wagner –Chief
DEQ Remediation & Redevelopment Division
Lansing, Michigan 48933

From: Bob Edwards - bluNorth Realty
Mike Griffin - Coldwell Banker Schmidt

Subject: TCE Plume Potential Economic Impact on Property Values

We, (Bob Edwards and Mike Griffin) are Realtors in the Bellaire/Mancelona area who have experienced the apprehension, and eventual loss, of potential buyers of property in this area. This is due to the uncertainty associated with vague and piece-meal efforts to address the TCE plume. As part of the community's desire and advocacy for a comprehensive and long term upgrade of the public water system to address this problem, we agreed to compile the necessary data, and prepare an evaluation relative to potential and current impacts on real estate values within the target area of aquifer contamination from TCE.

The areas of potential water contamination are located primarily, but not exclusively, within the boundaries of Shanty Creek Resort. Specifically, in sections 30, 32, and 33 of Kearney Township, and sections 4, 5, and 6 of Custer Township. 1000 parcels were identified within a 9.75 square mile area of which 431 are developed, i.e. residential/commercial, and 569 vacant building sites.

For the purpose of this report, and because real estate value is determined by economic conditions at any given time, it was determined that the most effective method for deriving a total dollar number, would be to analyze the data available on the county database. It was also determined that the best available data for property values would be the State Equalized Value (SEV), and the Taxable Value, multiplied by the current millage rates for Homestead and Non-homestead property. These two numbers, the individual SEV and Taxable, when added to arrive at a whole, would then provide the relative two numbers in terms of dollars lost as a result of an incident. It should be clear that should such an incident occur, these properties would be rendered unsaleable and their value would, literally, become zero. Lending institutions will not provide a mortgage on a contaminated property. Each property

owner, regardless of whether the property is vacant or residential, is required by Federal law to disclose this information to potential buyers in writing. We can foresee no scenario where a buyer, once aware of the plume, would go forward with any purchase. The likely scenario based on similar past events, would be that the property owners would simply walk away from their obligations, and the property would be foreclosed by the lender if it is mortgaged, or, if it is owned outright, would be forfeited for non-payment of taxes.

These data were subsequently segregated by the Kearney and Custer Township Assessors David Grimm and Bob Logee respectively, and the resulting numbers were arrived at by Mike & myself. The data is derived from tax year 2013. Certainly the numbers are conservative given the likely property value increases, as well as the respective property tax increases over the next several years.

- Total Estimated Loss of Property Value - \$33,681,200
- Total Estimated Loss of Tax Revenue - \$ 661,187

Of the estimated tax revenue loss, approximately 27% or \$178,515 is lost to Antrim County.

Note: Supporting data on file bluNorth Realty 509 E. Cayuga Bellaire, Mi. 49615

Cc: Dean Branson
Mike Crawford
Steve Grill
Gary Knapp



EST. 1891

VILLAGE OF BELLAIRE

202 N. BRIDGE STREET

PO BOX 557

BELLAIRE, MI 49615

March 7, 2014

Mr. Robert Wagner, Division Chief
DEQ-Remediation & Redevelopment Division
Constitution Hall, South Tower, 5th Floor
P.O. Box 30426
Lansing, Michigan 48909-7926

Dear Mr. Wagner:

While the Cedar River Well Field and the Wickes Manufacturing TCE Plume are located in neighboring townships, the economic consequences resulting from the threat of water contamination, know no boundaries. The declining property values and the potential loss of business at the largest local employer, Shanty Creek Resorts, will have an adverse impact on the Village of Bellaire and the residents and businesses who call the Village their home.

Cognizant of this threat to the Cedar River Well Field, the Village of Bellaire Council authorized me to write a letter supporting the efforts of the Antrim Coalition United Through Ecology (ACUTE) to coordinate stakeholder awareness and involvement to protect the public health, the environment, and the local and regional economies. I was in attendance at the Antrim County Board of Commissioner's meeting during which members of ACUTE presented a comprehensive plan that includes the installation of a storage tank, the drilling of a new well, and the extension of potable water systems to Shanty Creek Resorts.

On behalf of the citizenry of the Village of Bellaire, the Village Council acknowledges the actions taken by the DEQ to monitor the migration of the TCE plume and appreciates an on-going commitment to address this problem.

Sincerely,

David L. Schulz
Village President

February 21, 2014

Bob Wagner
MDEQ/Remediation and Redevelopment Division
Constitution Hall, S, 5th Floor, S
525 West Allegan Street
Lansing, MI 48933
(Mail Code 76116)

Dear Mr. Wagner,

A large portion of the residents of Custer Township are in the path of the TCE plume. Many of these residents are elderly, lifelong residents who survive on fixed incomes and poverty level families who would not be able to afford personal water purifying systems. The winter weather being what it is, running to the store constantly for bottled water would also present a financial and personal hardship. The mental stress caused by the uncertainty of safe drinking water would be an additional burden to a great many of our residents.

Tourism is the main source of revenue in our area. Even the rumor of contaminated water would greatly affect Shanty Creek Resorts, the largest employer in the area. Real estate sales would be affected. Tourists and potential property purchasers would go elsewhere.

MAWSA (Mancelona Area Water and Sewer Authority), the current provider of safe drinking water at the head of the plume, is doing a successful job of providing pure drinking water within its current boundaries. As the plume spreads, the water system must expand. Without State financial support, the cost of expanding this system will ultimately be passed onto the system users. Not only will current residents and businesses be hard put to withstand these expenses, new business prospectors and residential developers will surely pass us by.

The continuing movement and contamination by the TCE plume will cause devastation in Custer Township, both economically and personally, if the continuation of a safe, clean drinking water system is not supported.

The TCE plume is a reality that has to be addressed. The residents of Custer Township are not responsible for causing this contaminated plume. The State did not cause it. If all of Antrim County, and especially Custer Township, are to continue to survive the effects of this TCE plume, we need to continue expanding the clean drinking water system. We urgently ask the State for financial assistance in helping us save our area from economic and personal disaster.

Sincerely,



Roxann Flake, Supervisor
Custer Township



ANTRIM COUNTY
BOARD OF COMMISSIONERS

P.O. Box 520
Bellaire, Michigan 49615
Phone (231) 533-6353
Fax (231) 533-6935
Chairman: Michael Crawford

Mr. Robert Wagner, Division Chief
DEQ Remediation & Redevelopment Division
Constitution Hall, South Tower, 5th Floor
PO Box 30426
Lansing, MI 48909-7926

February 26, 2014

Dear Mr. Wagner:

At our regular meeting on February 13, 2014, the Antrim County Board of Commissioners voted to write a letter supporting the efforts of the Antrim Coalition United Through Ecology (ACUTE) to protect the public health due to the groundwater contamination from the trichloroethylene (TCE) plume in Mancelona.

At the February meeting, members of ACUTE presented a comprehensive plan that included a storage tank at Cedar River, an extension of potable water systems to Shanty Creek, and the drilling of a new well east of Mancelona that would provide potable water in anticipation of the plume reaching the Shanty Creek or Cedar River well systems. The Antrim County Board of Commissioners supports this plan.

The Board has many grave concerns regarding the spread of the TCE plume. Foremost among these concerns is the health and safety of the citizens of the State of Michigan, but another critical issue is the probable economic impact on property values to an area whose public drinking water supply is perceived to be under threat.

In addition, the Board of Commissioners would like to encourage remediation efforts regarding the TCE plume. Ensuring the quality of Antrim County's water resources for future generations is of great concern to the Commissioners, to Antrim County, and to the State of Michigan. We respectfully request the submission of a remediation plan as part of the comprehensive plans that involve the Mancelona TCE plume.

Sincerely,

Michael Crawford
Chairman, Antrim County Board of Commissioners